

WHITE HOUSE CONFERENCE
ON CHILD HEALTH AND
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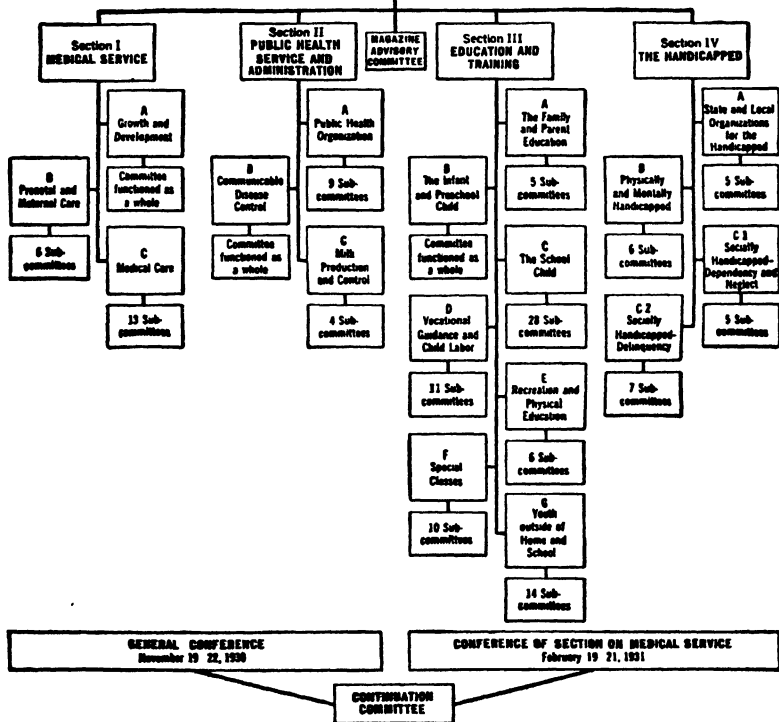
WHITE HOUSE CONFERENCE ON CHILD HEALTH, AND PROTECTION

Called by President Hoover

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SPECIAL EDUCATION
THE HANDICAPPED AND THE GIFTED

XIII For every child who is blind, deaf, crippled, or otherwise physically handicapped, and for the child who is mentally handicapped, such measures as will early discover and diagnose his handicap, provide care and treatment, and so train him that he may become an asset to society rather than a liability. Expenses of these services should be borne publicly where they cannot be privately met

From THE CHILDREN'S CHARTER



Courtesy of Denver Public Schools

TEACHING THE DEAF TO HEAR THROUGH THE FINGERS. RIGHTLY TRAINED IN THE
EARLY YEARS, A NEW WORLD OPENS TO THE CHILD WITH A HANDICAP

SPECIAL EDUCATION:

THE HANDICAPPED
AND
THE GIFTED

REPORT OF THE COMMITTEE ON
SPECIAL CLASSES
CHARLES SCOTT BERRY, PH.D., *Chairman*

WHITE HOUSE CONFERENCE ON
CHILD HEALTH AND PROTECTION



THE CENTURY CO.

NEW YORK

LONDON

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Dedicated to

THE CHILDREN OF AMERICA

WHOSE FACES ARE TURNED TOWARD THE LIGHT
OF A NEW DAY AND WHO MUST BE PREPARED TO
MEET A GREAT ADVENTURE

SECTION III

EDUCATION AND TRAINING

F. J. KELLY, PH.D., *Chairman*

Chief, Division of Colleges and Professional Schools,
Office of Education, United States Department of the Interior,
Washington, D. C.

COMMITTEE F

SPECIAL CLASSES

CHARLES SCOTT BERRY, PH.D., *Chairman*

Director, Bureau of Special Education, College of Education,
Ohio State University, Columbus, Ohio

THE CRIPPLED

(All aspects of the subject of the crippled are so closely related that it seemed advisable to submit but one report. The members of the Subcommittee on the Crippled of the Committee on Special Classes (III F) and the members of the Subcommittee on the Crippled of the Committee on the Physically and Mentally Handicapped (IV B) are therefore given.)

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LAURA HOOD, Chicago

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- HENRY THOMAS, Professor, Orthopedic Surgery, College of Medi-
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BRONSON CROTHERS, M.D., Assistant Professor of Pediatrics, Harvard University Medical School; Neurologist to Children's Hospital; Boston

ALBERT H. FREIBERG, M.D., Professor of Orthopedic Surgery, University of Cincinnati, Cincinnati, Ohio

LAURA HOOD, Chicago

MRS. ARTHUR LEHMAN, President, Crippled Children's East Side School, New York City

HAZEL C. MCINTIRE, Director of Special Classes, State Department of Education, Columbus, Ohio

MRS. WILLIAM BROWN MELONEY, Editor, Sunday Magazine, New York Herald Tribune, New York City

LOUISE C. ODENCRANTZ, Director, Employment Center for the Handicapped, New York City

ROBERT B. OSGOOD, M.D., Professor of Orthopedic Surgery, Harvard University Medical School, Boston

MARY L. SELDEN, Secretary, Committee on After-Care of Infantile Paralysis Cases, The Emergency Aid of Pennsylvania, Philadelphia

JOHN J. SIPPY, M.D., District Health Officer, San Joaquin Local Health Unit, Stockton, California

MRS. EDITH REEVES SOLENBERGER, International Society for Crippled Children, Upper Darby, Pennsylvania

CHARLES J. STOREY, Secretary, City Recreation Committee, Welfare Council, New York City

JOE F. SULLIVAN, Editor, Hospital-School Journal, Battle Creek, Michigan

THE BLIND AND THE PARTIALLY SEEING

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Associate Director, National Society for the Prevention of Blindness, New York City

SAMUEL P. HAYES, Ph.D., Professor of Psychology, Mount Holyoke College, South Hadley, Massachusetts

ROBERT B. IRWIN, Executive Director, American Foundation for the Blind, New York City

COMMITTEE MEMBERS

xv

Advisory Committee

- E. V. L. BROWN, Director, Department of Ophthalmology, Billings Hospital, University of Chicago, Chicago
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EDWARD T. MYERS, PH.D., Supervising Principal, Bridesburg School, Philadelphia
OLIVE S. PECK, Assistant Supervisor of Sight-Saving Classes, Cleveland, Ohio

THE DEAF AND THE HARD OF HEARING

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American Federation of Organizations for the
Hard of Hearing, Inc., Boston

- MABEL ELLERY ADAMS, Principal, Horace Mann School for the Deaf, Roxbury, Massachusetts
H. M. McMANAWAY, Superintendent, Virginia School for the Deaf and the Blind; President, American Association to Promote the Teaching of Speech to the Deaf, Staunton, Virginia
WENDELL C. PHILLIPS, M.D., Founder, American Federation of Organizations for the Hard of Hearing, Inc.; Past President, American Medical Association, New York City
RUDOLF PINTNER, PH.D., Professor, Education Psychology, Teachers College, Columbia University, New York City.
"Survey of American Schools for the Deaf for the Year 1924-25"
BETTY C. WRIGHT, Associate Director, American Federation of Organizations for the Hard of Hearing, Inc., Washington, D. C.

THE DEFECTIVE IN SPEECH

ROBERT WEST, PH.D., *Chairman*,
Professor of Speech Pathology, University of Wisconsin,
Madison, Wisconsin

- PAULINE B. CAMP, Director, Child Guidance and Special Education, Madison Public Schools, Madison, Wisconsin
LEE E. TRAVIS, PH.D., Director, Speech Clinic, University of Iowa, Iowa City, Iowa. "Speech Pathology, 1931"

Advisory Members

- SARA M. STINCHFIELD, Associate Professor of Psychology, Mount Holyoke College, South Hadley, Massachusetts
EDWIN B. TWITMYER, Professor of Psychology, University of Pennsylvania, Philadelphia

COMMITTEE MEMBERS

CHILDREN OF LOWERED VITALITY

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Child Health Association, New York CityLEROY A. WILKES, M.D., Director, Division of Medical Service,
American Child Health Association, New York City

THE MENTALLY RETARDED

META L. ANDERSON, PH.D., *Chairman*,Director, Department of Binet Schools, Board of Education,
Newark, N. J. "Education of Mental Defectives"ELIZABETH E. FARRELL, Inspector of Ungraded Classes, Board of
Education, New York CityALICE B. METZNER, Director of Special Education, Board of Edu-
cation, Detroit, Michigan

BEHAVIOR PROBLEM CHILDREN

HARRY J. BAKER, PH.D., *Chairman*,Director of Psychological Clinic, Detroit Public Schools, Detroit,
Michigan. "Characteristic Differences in Bright and
Dull Pupils"; "Educational Disability and
Care-Studies in Remedial Teaching"BRONSON CROTHERS, M.D., Assistant Professor of Pediatrics,
Harvard University Medical School; Neurologist to Children's
Hospital, BostonCLINTON P. McCORD, M.D., Psychiatrist to Children's Hospital
and Consulting Neuro-Psychiatrist and Psychoanalyst, Albany,
New YorkEDWARD H. STULLKEN, Principal, Montefiore Special School,
Chicago Board of Education, Chicago

THE GIFTED

HENRY H. GODDARD, PH.D., *Chairman*,Professor, Abnormal and Clinical Psychology, Ohio State
University, Columbus, Ohio. "School Training
of Gifted Children"

MRS. BENJAMIN PATTERSON BOLE, Cleveland, Ohio

ALICE B. METZNER, Director of Special Education, Board of Edu-
cation, Detroit, Michigan

COMMITTEE MEMBERS

xvii

LEWIS M. Terman, Ph.D., Professor of Psychology, Stanford University, Palo Alto, California

ELIZABETH L. Woods, Ph.D., Director, Division of Psychology and Educational Research, Los Angeles City Schools, Board of Education, Los Angeles, California

TRAINING OF TEACHERS

CHARLES M. ELLIOTT, *Chairman*,

Director of Special Education, Michigan State Normal College, Ypsilanti, Michigan

STELLA V. STILLSON, Director, Division of Education of Exceptional Children, State Teachers College, Milwaukee, Wisconsin

J. E. W. WALLIN, Ph.D., Professor of Psychology and Director of Psychological Laboratory and Clinic, Atlantic University, Virginia Beach, Virginia. "Education of Handicapped Children"

ORGANIZATION AND ADMINISTRATION

LEWIS A. WILSON, D.Sc., *Chairman*,

Assistant Commissioner for Vocational and Extension Education, State Education Department, Albany, New York

J. L. CLIFTON, Ph.D., Director of Education, State Department of Education, Columbus, Ohio

MRS. KATHERINE M. COOK; Chief, Division of Special Problems, U. S. Office of Education, Washington, D. C.

CHARLES H. ELLIOTT, Ph.D., State Commissioner of Education, Department of Public Instruction, Trenton, New Jersey

ARCH O. HECK, Associate Professor of School Administration, Ohio State University, Columbus, Ohio. "Education of Crippled Children"; "Special Schools and Classes in Cities of 10,000 or More"

CHARLES S. MEEK, Superintendent of Schools, Toledo, Ohio

J. E. W. WALLIN, Ph.D., Professor of Psychology, Atlantic University, Virginia Beach, Virginia

FOREWORD

The education, through specialized methods and classes, of children who do not fit into the general educational plan, those whose work is impeded by some physical or mental handicap, or those who through superior mental endowment do not adjust to a curriculum adapted to the average, is a comparatively new development of education. These children there have always been and some effort made to meet their educational needs, but recognition of them by educational systems and extension of public school facilities to include them as having equal rights with other children is a recent departure. A study of the health and welfare of American children would be incomplete without consideration of this new and increasingly important branch of education. The data assembled here are the most complete and searching which have been brought together.

The methods of the subcommittees of the Committee on Special Classes have been those laid down by the advisory committee of the White House Conference. Information was gathered from published sources as far as they went, additional data were secured through questionnaires and correspondence, and reports of organizations and agencies concerned with these children were consulted. For the study of the crippled valuable unpublished sources of information were made available through the generous cooperation of the United States Children's Bureau, the Office of Education and the Bureau of Vocational Rehabilitation. A considerable amount of the statistical data for the report on the blind and the partially seeing was obtained from the survey made by Dr. Edward T. Myers. His cooperation has greatly facilitated the work of the Committee.

The personnel of the Committee on Behavior Problem Children included representatives from the fields of school

administration, psychology, psychiatry, neurology, and pediatrics, all of whom agreed on a unified program to which the Committee heartily subscribed.

Fortunately for the purpose of the Subcommittee on the Training of Teachers, several very careful recent studies were made available for use, making it unnecessary to resort to extensive surveys covering essentially the same fields of inquiry.

In every phase of its work the Committee has had the invaluable cooperation of experienced workers in the field of special education who gave unstintingly of their time and efforts. It would be impossible to estimate the extent to which executives of state departments, heads of departments in educational institutions, superintendents of local schools, teaching groups, and representatives of official and voluntary organizations, participated in the work of the different committees. Grateful acknowledgment must be made of their cooperation. Without it this report would not be possible. The time and effort which they gave can only be justified in the hope that they contribute to a more concerted public effort to better the educational opportunities for these several groups of children who will form part of our future citizenry.

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■

SPECIAL EDUCATION
THE HANDICAPPED AND THE GIFTED

■

SPECIAL EDUCATION

A SUMMARY

THE work of the Committee on Special Classes of the White House Conference on Child Health and Protection deals with the public school education of all types of exceptional children. Realizing the importance of this subject and the steadily growing interest of the general public, particularly the parents, in this comparatively new field of education, every effort was made to tap any available source of information.

It is the first time in the history of educational publications that a work of this nature, covering every branch of special education, has been issued. It must not be read as final, however, but as a study of conditions so obviously needing improvement that there should be no hesitation in effecting the recommendations of the various subcommittees. The figures quoted, it must be remembered, are estimates based upon information available at the time the statistics were gathered. The statements made are based on samplings from various districts and cities visited. Very little information could be obtained as to the extent of special education in the rural districts but from all accounts it would seem to be a negligible quantity.

All who study this question are convinced that we are still at the very beginning of this new phase of education and when it is realized by the public generally that it is sound public policy, not charity, to provide special treatment and training for all types of exceptional children, steps will be taken to enable every child to receive the type of education best fitted to his intellectual and physical needs.

The term *exceptional children* includes both the handicapped and the gifted, or children who deviate from the average child to such an extent as to require special treatment or training in order to make the most of their possibilities. It includes:

The crippled; the blind and the partially seeing; the deaf and the hard of hearing; the defective in speech; children of lowered vitality; the mentally retarded; children with behavior problems (the nervous, the emotionally unstable, and the delinquent); the gifted.

The need for special education of handicapped children is evidenced by such facts as these:

- 500,000 individuals found in our prisons, hospitals for mental disease, almshouses, and institutions for feeble-minded
- 70,000 persons every year admitted for the first time to hospitals for mentally diseased
- 300,000 persons every year committed to prison.

For every person who is committed to prison or admitted to a hospital for mental disease, there are several at large who are unadjusted to the complex social and industrial conditions of modern life.

Few investments of the taxpayer's money have yielded as large a return as that invested in vocational rehabilitation. In one state alone, the difference in the amount earned by the disabled during the year immediately preceding vocational rehabilitation, when compared with the amount earned the first year after rehabilitation, was more than five times the cost of rehabilitation. If such results can be obtained by the special training of disabled adults who have in large measure lost the plasticity and adaptability of youth, how much more can be accomplished through the special treatment and training of handicapped children? It is unquestionably better public policy to spend more money today in helping the handicapped child to help himself, than it is to spend many times as much tomorrow in supporting him at public expense.

SIGNIFICANT FINDINGS

There are in the United States :

- 14,400 blind children under twenty years of age.
 6,000 of these are being educated in state, private or public day schools and classes.
 The annual per capita cost of educating blind children in state residential schools is \$630
 The annual per capita cost in braille classes in public schools ranges from.... \$120-\$590
- 50,000 partially seeing children who should be in sight-saving classes. Less than
 5,000 of these are enrolled in such classes.
 The annual average per capita cost of educating partially seeing children in sight-saving classes is between..... \$200-\$250
 This ranges from \$132-\$331
- 3,000,000 with hearing impaired in various degrees.
 18,212 deaf children enrolled in schools and classes for the deaf.
 The medium annual per capita cost in day schools and classes for the deaf is..... \$264
 ranging from \$204-\$517
- 1,000,000 school children between the ages five and eighteen who are so defective in speech that they require remedial treatment and training.
 60,000 of these at the present time are receiving the necessary corrective training and treatment.
 The average annual cost per capita for speech correction in large cities is approximately \$10
- 300,000 crippled children;
 100,000 of these need special education;
 10,110 of these are enrolled in public schools and
 1,480 in state hospitals and schools, and in private schools.
 The average cost for special class education varies widely in different communities.

SPECIAL EDUCATION

Generally it is about four times that of the normal child in the same school system.	
382,000	children who are tuberculous;
850,000	more who are suspicious cases.
1,000,000	(approximately) school children who have weak or damaged hearts;
375,000	of these have serious organic heart disease.
6,000,000	children (approximately) of school age who are malnourished. Less than
40,000	of these are enrolled in open-window and open-air schools and classes. The medium annual per capita cost of open-window or open-air classes as reported by nine large cities is \$169
	The range is from \$100-\$305
675,000	at least 3 per cent of the elementary school enrolment, who present behavior problems. Less than
10,000	of these are enrolled in parental schools, special classes and schools.
450,000	pupils enrolled in elementary grades who are mentally retarded to such a degree that they require special education to make the most of their possibilities. Less than
60,000	of these are enrolled in special classes.

BASIS FOR A COOPERATIVE PROGRAM

The development of a cooperative program, which it is hoped will result from the White House Conference, must necessarily rest on common needs and common objectives.

The more significant of the common findings are as follows:

There is a surprisingly large number of handicapped children of every type who need special education, and a comparatively small number who are receiving it.

Special education of all types of handicapped children is almost wholly confined to cities.

The less seriously handicapped are more numerous

and more neglected than those who are more seriously handicapped.

The common aim in the education of all types of handicapped children in the special classes of the public schools is to prepare them to live successfully with persons who are not handicapped.

Adequate vocational guidance, prevocational and vocational training along with placement and follow-up work are seldom found in connection with the special classes of the public schools.

There is a remarkable variation in different cities in the cost of special education for the same type of handicapped child.

While much is being done in special classes to remove or reduce the handicap, little is being done to discover and develop special aptitudes.

There is marked variation in the laws of the different states relative to the organization and support of special classes.

Comparatively few handicapped children have the advantages of early discovery, treatment, and training.

CHALLENGE OF THE PROBLEM

From the facts presented and the recommendations made it is evident that the outstanding problem to be considered is the extension of special education to all handicapped children who require it. The magnitude of the problem is indicated by the fact that there are more than 3,000,000 children in the elementary schools of the United States who require special treatment and training to make the most of their possibilities. And this number does not include children who are suffering from malnutrition—a number approximated as 6,000,000—and 625,000 more who have weak hearts. Obviously, a problem of this magnitude requires for its solution the united efforts of all who are interested in child welfare.

All recommendations relative to the improvement of

special education may properly be regarded as but means to its extension. Some aspects of the problem which demand special consideration in the formulation of a progressive far-reaching program are publicity, cost, teacher training, legislation and cooperation.

Informing the public in regard to the possibilities of the handicapped child and what can and is being accomplished by special treatment and training is urgently needed. Unfortunately, it is true that the vast majority of the people do not believe that the handicapped child is worth educating.

In the mind of the average individual the blind, the crippled, the delinquent, the tuberculous, and the emotionally unstable are associated respectively with the blind beggar on the street, the crippled war veteran in a soldier's home, the hardened criminal preying on society, the tuberculous patient suffering a lingering death, and the hopelessly insane. To the average individual special education is charity. As long as such a conception prevails it will be impossible to extend special education to all who require it. Only as a given policy is found to be beneficial to society, as well as to the individual affected, does it receive adequate support.

Even the majority of persons engaged in educational work have no adequate conception of the possibilities of the handicapped child and of what can and is being done to realize these possibilities. The fact that there are many cities in the United States of 10,000 population or more in which no provision is made for the special education of any type of handicapped child is striking evidence that many school administrators have not yet grasped the need for and significance of special education.

The majority of the principals of elementary schools have little interest in the handicapped child. This is shown by the fact that few of them have even attempted to organize special classes in their own schools. It is unusual to find an elementary school principal who has anything like the same interest in the special education of the handicapped child as he has in the traditional education of the average child.

This lack of interest is also very marked among teachers of the regular grades. The education of the handicapped child is a challenge which the average teacher does not willingly accept. Her interest in the handicapped child is to get him out of her room where he is making unusual demands on her time and patience. For her the special class is not primarily an agency for development but a means of relief.

A PROBLEM OF PUBLIC EDUCATION

The history of the education of handicapped children explains in large measure the prevailing attitude of superintendents, principals, and teachers toward their education in the public schools. Until recent years the education of the blind, the deaf, the feeble-minded, and the delinquent was almost exclusively confined to state and private schools. The treatment and training of these types of handicapped children was not even considered a responsibility of the public schools. While the partially seeing, the hard of hearing, the defective in speech, the emotionally unstable, the less seriously mentally retarded, and those of lowered vitality were admitted to the public schools, their failure to succeed in the traditional school work was regarded as unavoidable, not as preventable.

Home instruction, remedial treatment, vocational training and placement were not considered functions of the public schools. Obviously, these traditional attitudes which are still characteristic of many older and more conservative superintendents, principals, and teachers must be changed if special education is to be extended to all handicapped children who require it.

Up to the present time we have largely assumed that it is sufficient to let the results of special education speak for themselves. They have spoken, it is true, but only in a still small voice heard by the few but not by the many.

TRAINING OF TEACHERS

One stumbling block in the way of improvement and extension of special education is the lack of adequately trained special-class teachers. The average yearly totals of special-class teachers trained during the past five years are: 189 teachers for the mentally deficient; 81 for the auditorially defective; 44 for the visually defective; 16 for the speech-defective, and 16 for the orthopedic.

A study of the work offered in special education by teacher-training institutions during the past five years indicates that more than half of the students preparing to teach mentally retarded children have pursued only a six weeks' training course. The majority of the teachers of the orally defective are being given one year of special training, and by far the larger proportion of these are being trained in private schools or in state residential schools for the deaf. Most of the training of teachers of children with defective vision is being done in various colleges and universities, under the auspices of the National Society for the Prevention of Blindness in intensive six weeks' courses during the summer sessions. Very little has as yet been done in the training of teachers for orthopedic classes. Only two institutions report work in this field; one a university offering eight semester hours, the other a teachers' college giving one year of training. Little more is being done in the training of teachers of speech correction.

The fact that the superintendents, principals, and supervisors while in teacher-training institutions have had no courses dealing with the characteristics and education of the handicapped accounts to a great degree for their lack of interest in the problem of special education. Furthermore, the teacher of limited special training finds it well-nigh impossible to break away from the traditional methods of instruction in teaching the handicapped child. With poorly trained teachers even skilful special supervisors find it very difficult to improve the work of special education.

It is evident that teacher-training facilities must be ex-

panded and the period of training lengthened, if special education is to be improved and extended.

THE COST OF EDUCATING THE HANDICAPPED

Many more special schools and classes would be organized for handicapped children if it were not for the great cost of special education. The annual per capita cost of education in special classes or schools is from one and one-half to four times as great as the per capita cost of education in the regular elementary schools, except in the case of the defective in speech who are instructed in the regular elementary schools, but who are given corrective work by the special teacher, the annual per capita cost of their education being only about \$10 more than that of the average child.

Cities differ in a remarkable degree in the annual per capita cost of special education for the same type of handicapped child. For the blind the range is from \$120 to \$590; for the deaf, from \$204 to \$517; for the child of lowered vitality, from \$100 to \$305; for the mentally retarded, from \$83 to \$454; for the delinquent, from \$162 to \$741; and for the crippled, from \$187 to \$593. However, in reporting, some cities may have included items of cost that were not included by other cities.

No large city in the United States is providing special education for all of its handicapped children who need it. Then how can any city justify an average annual per capita cost of \$400 or \$500 a year for the special education of any one type of handicapped child when it is not providing any special education for many who require it? The fact is, the distribution of special education among the handicapped is like the distribution of wealth among the people—the few have much, the many, little or none.

In some cities special schools for certain types of handicapped children have been erected at a per capita cost twice that of the regular elementary school buildings, while in these same cities special classes for certain other types of handicapped children are found in basement rooms and in

old school buildings not considered good enough for the average child.

From the standpoint of providing special education for all who require it, there is no problem of greater importance than that of determining how satisfactory results may be secured at a minimum cost. Little as yet has been done to solve this problem.

Early discovery and treatment of cases, standardization of the special educational equipment required for each type of handicapped child, and aid from local organizations in bearing the expense of special equipment and in assisting in the necessary social service and placement are methods of lowering the cost of educating and training the handicapped.

The great cost of special education is one reason handicapped children are so generally neglected in the smaller communities and rural districts. School districts which are taxed to the limit of their capacity to provide the traditional education for the average child are in no mood to add to their financial burden to provide special education for the handicapped child. There seems to be little hope of making adequate provision for the education of handicapped children in these poorer districts without state aid.

LEGISLATIVE SHORTCOMINGS

There is lack of uniformity in the amount of per capita state aid provided and great disparity in the distribution of this state aid among the different types of handicapped children.

It is obvious that in the enactment of legislation providing state aid for special education, the relative needs of the various types of handicapped children have received little consideration. In other words, it is not clear from existing law just what the function of state aid is.

There are in the United States one or more national and many state and local organizations working to ameliorate existing conditions for the different types of handicapped

children. "Most of these organizations, however are going ahead with their own work as if the other organizations did not exist. This lack of cooperation finds expression in the legislation which provides state aid for some types of handicapped children, but not for other types."

LACK OF UNIFORM EDUCATION

There is as yet no well-coordinated plan of special education. Superintendents of schools and boards of education are greatly influenced by local organizations interested in the care and education of handicapped children, with the result that the nature and extent of special education provided for a particular type of handicapped child is determined in large measure by the influence of the organization interested in that particular type of child. On the other hand, special education for those types of handicapped children not sponsored by outside organizations is very frequently neglected.

Through a federation of the national organizations interested in the handicapped or through a national council made up of one or more representatives selected by each of these national organizations, it should be possible to develop a national cooperative program for the care, treatment, training, placement, and follow-up of the various types of handicapped children. State councils formed in like manner might render a valuable service in coordinating, unifying, and developing the work for the handicapped in the various states.

WARFARE OF PREVENTION

A cooperative program in special education cannot stop with care, education, placement, and follow-up of the handicapped. It must include what is still more important, prevention. Prevention means the elimination of the causes that cripple children in body and mind. In a united warfare against these causes all organizations interested in the handicapped can cooperate most effectively with all other organizations interested in the amelioration of human life, since

these same causes which cripple the few are impairing the efficiency of the many. It is fitting that the united organizations interested in the handicapped should lead in this warfare against disease, ignorance, and poverty, since the handicapped children in whom they are interested are the most appealing objective evidence of society's failure to control disease and to eliminate poverty and ignorance. If the many national, state, and local organizations interested in the various types of handicapped children once recognize the vital interests they have in common, a cooperative program in special education becomes possible.

EDUCATION OF THE GIFTED

The need for special education of gifted children is indicated by the large percentage of failures in our colleges and universities due, not to lack of capacity, but to bad habits and undesirable attitudes; by the many graduates of higher institutions of learning who do not feel under the slightest obligation to society which made possible their higher education; and by those gifted children who leave school because of dissatisfaction with traditional education.

The problem is to determine the nature and extent of the special education required to enable the gifted child to attain his maximum development.

Significant findings show that there are:

1,500,000 gifted children in private and public schools in the United States.

4,000 of these in forty cities are enrolled in special classes for gifted children.

There are two types of methods: rapid progress and enrichment; or adding new subjects. The latter is generally conceded to be superior. Nothing is being done in small towns or rural districts toward special education of the gifted.

It is hoped that the White House Conference will give this most vital problem, the education of the gifted child, special consideration.

MEASURES RECOMMENDED

There is general agreement that as rapidly as possible special education should be provided for handicapped children in smaller communities and rural districts; that in the special education of every type of handicapped child there should be some contact with normal children. As far as possible the child's attention should be directed away from his handicap to the development of his major possibilities.

It is the function of special education to provide adequate vocational guidance, prevocational and vocational training, and to place and follow up handicapped children upon leaving school. More attention should be given to the discovery and development of special aptitudes. It is agreed that in naming special classes the name should, as far as possible, indicate the function of the class rather than the handicap of its members; that there is need for more and better trained teachers; that there should be closer cooperation between special classes in the public schools and state schools and institutions; that certain types of handicapped children can be educated to better advantage in state schools and institutions than in special classes of the public schools.

Greater effort should be made to arouse the interest and to secure the support of civic and welfare organizations in the special education of all types of handicapped children, and state and federal aid should be sought to make possible the extension of special education to all who require it. A study should be made of desirable state legislation; greater effort should be made to acquaint the general public with the possibilities of the handicapped.

Early discovery, early treatment, and early training are of vital importance; research should be encouraged in all phases of special education; and, finally, a united effort should be made to eliminate the preventable causes.

The problem of the extension of special education to handicapped children requires for its solution the united efforts of all who are interested in child welfare.

Aspects of the problem that demand special consideration are: publicity; cost; teacher-training; legislation; and cooperation.

Special Recommendations

The immediate organization of a National Council for Handicapped Children made up of representatives of the national organizations interested in such children to promote aggressively measures for making effective the recommendations of the Committee on Special Classes of the White House Conference on Child Health and Protection.

The immediate creation in each state of a State Advisory Council for Handicapped Children made up of representatives of state organizations or agencies interested in such children to cooperate with the National Council and to promote aggressively in the states measures for making effective the recommendations of the Committee on Special Classes of the White House Conference on Child Health and Protection.

THE CRIPPLED

THE CRIPPLED

THE education of the crippled child is not philanthropy—it is enlightened self-interest.

This statement made more than thirty years ago by an English barrister, during a campaign to arouse interest in the education of crippled children, expresses the spirit of the movement in behalf of these children which has swept this country during the last ten years. Slowly but surely, the responsibility for their care and training is being shifted from the shoulders of clinics, hospitals, convalescent homes, and private schools, philanthropically supported, to agencies maintained at public expense. The most effective of these, experience has shown, are special schools and classes for crippled children organized within local public school systems.

The aim of these classes, which is "to give every child the best physical condition it is possible for him to attain, the best education it is possible for him to assimilate, and to help him find his place for service in the world's work," does not differ from the educational ideal for normal children. But for crippled children highly specialized methods and services are essential to educational opportunity. For many children, early discovery of the potentially crippling disease or condition and prompt medical and surgical care will mean the complete removal of the physical handicap and restoration to the ranks of normal children. For others, even early and efficient attention cannot restore them completely to normal, and for these it is now widely recognized that academic education and vocational training must go hand in hand with scientific physical care for periods of months or even years. Some agency must assume responsibility for the lengthy and unremitting services required for each individual crippled child if the objectives of the educational program are to be realized for him.

Each community, either state, city, county, or rural district, undertaking to provide an adequate education of its crippled children is confronted by three major problems: (1) to discover the number of children who must have special facilities and services if their opportunities for cultural education and training for productive citizenship are to equal those of normal children; (2) to determine the best method of securing these special advantages to each child within the range of his mental ability and physical potentialities; (3) to finance the program of special education which is, of necessity, more expensive than that of the normal child in the same community.

No public school system can carry out the necessary complex program (entailing prompt discovery; scientific diagnosis; orthopedic, and after-care treatment; academic education; social care and training; vocational guidance, training, and placement; with follow-up services in each special phase of care) except through the definite coordination of the activities of the medical, social, and industrial agencies of the community with those of the educational department. In addition the cooperation of a well-informed public working through lay groups of various types is necessary.

The necessity and value of basing the program of special education upon a thorough study of the needs and the resources of the given locality at the particular time is demonstrated by the various methods of approach and by the measure of success attained in solving these problems under widely different conditions in the several states and local communities.

The purpose of the present study is threefold: (1) to discover the extent and nature of the educational problem presented by crippled children in certain states and local communities that may be taken as representative of conditions in the country as a whole; (2) to consider the legislative provisions and the administrative policies of those states which have undertaken the more comprehensive programs for the special education of crippled children; (3) to

study the methods, the scope and character, the cost, and the result of such work in state and local systems.

While it is obvious that no uniform scheme of special education can be proposed which would be suited to local conditions or the administrative organization of the educational systems of the several states, it is believed that in the common experience of workers in this pioneer field and in the methods and expedients that have proved successful, there may be discovered those general principles and standards which are fundamental to the development of a sound educational program in any community.

Information has been gathered by this Committee from published sources as far as possible, and additional data secured through questionnaires and correspondence. The chief sources consulted have been the published reports of state commissions and local committees for the survey of the needs of crippled children; the proceedings and reports of Federal and State Boards for Vocational Rehabilitation; the International Society for Crippled Children, and its constituent state societies; and many other official and voluntary organizations engaged in special phases of care. Through the generous cooperation of the United States Children's Bureau and the Departments of Education and Vocational Rehabilitation, valuable unpublished sources have been made available.

In studying community resources, two questionnaires were sent out. One, relating to education in special day schools and classes, was sent to public and private school authorities in every community believed to have established such classes. This covered sources of support; location of classes; capacity and cost of plant and equipment; standards of admission, staff, organization and character of work; special services; classification of disabilities of children; recreational facilities; follow-up work; cooperation with outside agencies, and records. Information of the same general character was sought in the questionnaire sent by the Subcommittee on the Crippled ¹ to state hospital schools and

¹ Committee on the Physically and Mentally Handicapped, IVB.

homes; to state university hospitals; and to local public and private orthopedic and general hospitals and convalescent homes caring for considerable numbers of crippled children.

GENERAL FINDINGS

EXTENT AND NATURE OF THE PROBLEM

Because there is no generally accepted definition of the term *crippled child*, statistics relating to the number of crippled children are not consistent. The fact that in communities where there is an aroused public interest in the subject there is a much higher ratio per thousand general population does not mean that there is actually a larger number of cripples in those communities but reflects the recognition of the value of preventive measures. In other words, the crippled child is discovered and brought to clinics for diagnosis, whereas, in districts where the work is new, these children are not brought to the attention of medical or educational authorities.

Variation in Definition

The definitions used in the special surveys of crippled children have not been uniform. In the Chicago study¹ the children enumerated were those "whose muscular movements are restricted by disease, accident, or congenital deformities." In the New York State, New Jersey and Wisconsin surveys the definition used was both numerical and qualifying, including children "whose activity is, or due to progressive disease, may become, so far restricted by loss, defect or deformity of bones or muscles, as to reduce his capacity for education or self-support."

In the statutes of the states which provide for the special education of crippled children, the term *crippled* is used

¹ Survey for Rotary Club of Chicago, *Crippled Children in Chicago*, The Chicago Community Trust, 1924, p. 14; N. Y. State Commission for Survey of Crippled Children, 1924, p. 9; N. J. State Temporary Commission for Inquiry Relating to the Distribution and Condition of Crippled Children, 1928, p. 5; Wisconsin Association for the Disabled, *Care and Education of Crippled Children and Adults*, Bulletin No. 1, 1928, p. 17.

without definition in some instances; the tendency in more recent legislation is to allow for liberal interpretation in individual cases, emphasizing the child's inability to attend regular classes with safety and profit, rather than the exact nature of the physical disability.¹ The amendments to the Education Law and the Children's Court Act in New York define the physically handicapped child as a "person under twenty-one years of age, who, by reason of physical defect or infirmity, whether congenital or acquired by accident, injury, or disease, is or may be expected to be totally or partially incapacitated for education or for remunerative occupation, but shall not include the deaf and the blind."

In making the present study the term *crippled* was not defined in the questionnaires sent out, as the object was to discover the number of children found to require special services under the working definitions in the communities studied. The main types of crippling diseases and conditions found among children in the special classes and in schools for crippled children were listed in the classification of causes of crippling included in the questionnaires. The percentage of cardiac cases was also listed, as in many places this group is being cared for in orthopedic classes.

Since the chief aim in the program for crippled children is the prevention of crippling and deformity, it is clear that the definition used in enumeration or in legislative enactments should be broad enough to include not only those children who are born with definite deformities, or have developed them through disease or neglect, but also those who are liable to become deformed through crippling diseases or bad posture.

The following definition of an orthopedic crippled child is suggested:

The crippled child, in the orthopedic sense, is a child that has a defect which causes a deformity or an interference with normal function of the bones, muscles, or joints. His condition may be congenital

¹ Laws of California, Illinois, Indiana, Maryland, Michigan, Minnesota and Ohio.

or it may be due to disease or accident. It may be aggravated by disease, by neglect, or by ignorance. (*Orthopedic*, throughout this report, is used as meaning to *straighten the child*.)

Ratios of Crippled Children in the General and School Population

A ratio of 2.5 crippled children under eighteen years of age per 1,000 general population was used by the New York State Commission in 1924 as a preliminary estimate upon which to distribute cards for the state survey.¹ Since that time this ratio has been widely used by states and local communities in making preliminary estimates. The findings of state-wide studies and intensive surveys in local communities indicate that, although under the same definition and method of investigation there are wide variations in the number of crippled children in proportion to the general population in different localities for the country, as a whole this ratio may be considered conservative.²

Wide variations in the ratios of crippled children in the general and in school population in different localities, are indicated by the following findings for cities, towns, and counties, shown in Table 1.

In New York the ratios of crippled children in the school population for the state were 3.14 for the total of counties not including cities; 4.90 for counties including cities; in New Jersey this ratio for the state was 7.42.³ In Broome County, New York, where figures have been carefully checked over a period of years, the ratio in the population under eighteen years of age approximates 12 to 15 per 1,000, in-

¹ Derived from New York City Survey of 1920, checked by the Cleveland Survey in 1916. New York Commission Survey, Report, 1924, p. 15.

² In New Jersey, the final total of 11,671 cases discovered by the Commission up through 1929 represents a ratio of 2.9 per 1,000 general population according to 1930 census returns for the population of the state. Reports from statewide surveys in progress in Arizona, Colorado, Illinois, Kansas and Massachusetts will help in determining the feasibility of using this ratio in making preliminary estimates.

³ N. Y. State Commission, Report, 1924, p. 20. N. J. State Temporary Commission, Report, 1928, p. 38.

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TABLE 1

VARIATIONS IN RATIOS OF CRIPPLED CHILDREN PER THOUSAND GENERAL POPULATION AND PER THOUSAND SCHOOL POPULATION UNDER EIGHTEEN YEARS OF AGE

	General		School	
<i>Cities of 100,000 and over</i>				
New York State Survey, 1924 ^a	—	—	4.04	8.12
New Jersey Survey 1927 ^b	1.72	4.37	8.38	15.11
New Jersey Study 1929 ^c	1.24	4.07	3.40	11.38
<i>Cities of 30,000 to 100,000</i>				
New York State.....	0.91	2.98	4.36	16.67
New Jersey.....	1.70	9.79	3.49	11.37
<i>Cities and towns under 15,000</i>				
New York State.....	0.10	6.19	—	—
New Jersey..	0.64	4.88	2.96	9.99
New Jersey—1929..	1.19	5.10	—	—
<i>Counties ^a</i>				
Pennsylvania 4 counties	2.4	8.3		
Missouri 3 counties	1.9	3.8		
Michigan... . . 2 counties	9.2	11.3 (Includes cardiac cases)		
Maryland..... 3 counties	As high as 3.1			
Wisconsin... . . 4 counties	2.6 (used in making estimate for the State on basis of findings in four counties)			

^a N. Y. State Commission, Report, 1924, pp. 27-28. ^b N. J. State Temporary Commission, Report, 1928, pp. 11-16. ^c *Ibid.*, 1930, p. 7. ^d Pa., Report from Exec. Sec. Pa. Society for Crippled Children, March, 1930; Mo., Report from Exec. Sec. Mo. Society for Crippled Children, Feb., 1930; Mich., Report from Exec. Sec. Mich. Com. for Crippled Children, Feb. 1930; Md., Report from Exec. Sec. Md. League for Crippled Children, April, 1930; Wis., Report, Director Crippled Children Div., Dept. of Public Instruction, April, 1930.

cluding children with some minor orthopedic defects.¹ In Michigan, the study of a school population of about 8,000 disclosed a ratio of 26 per 1,000 including cardiac cases.²

While the foregoing figures represent the number of crippled children enumerated under the definitions adopted for survey purposes, they include many children who present no unusual problems of education. In cities where facilities for complete orthopedic after-care treatment have been available for some years, experience has shown that about one-third of the total number of children reported are in need of the facilities and services afforded in the special

¹ Information from Chief, Bureau for Physically Handicapped Children, February, 1930.

² Report of Exec. Sec. Mich. Commission for Crippled Children, Feb., 1930.

schools. The state departments of Ohio and Michigan and the City of Chicago offer this conclusion. In Wisconsin, the legislative program for education in special public schools and classes has been planned to provide for about this same proportion of children on the basis of careful classification of cases discovered in the survey of four typical counties.

Age Distribution

Analysis of the many complex problems incident to providing an adequate educational program for crippled children is somewhat simplified by approaching them from the standpoint of the children's needs in the preschool, the elementary school, and the high school or vocational periods.

Until recently more attention was given to the groups of the older children than to the preschool child, although numerically this group is large and from the standpoint of the prevention of crippling from disease and congenital deformity it is strategically the most important. Upon analyzing statistics relating to the causes of crippling from the findings of the New York State Survey, the Cleveland and New York City Surveys, and the records of many orthopedic hospitals, the New York State Commission found that infantile paralysis, bone tuberculosis and rachitis—all of which are most likely to affect very young children—together with congenital deformities, accounted for 74 per cent of crippling conditions. The New Jersey Commission found that infantile paralysis was the cause of crippling in over 33.3 per cent of the total number of cases, and diseases and accidents in over 25 per cent. An analysis of the onset of crippling conditions in 1,531 cases in Chicago disclosed the fact that 83 per cent of the children under twenty-one years of age had been crippled under the age of six years, while in Wisconsin it was found that in 470 cases, 79 per cent were crippled before the age of seven.¹ In a special study of

¹ N. Y. State Commission, Report, 1924, p. 43. N. J. State Temporary Commission, Report, p. 8. *Crippled Children in Chicago*, p. 19. *Care and Education of Crippled Children and Adults*, Wisconsin Association for the Disabled, Bulletin No. 1, p. 20.

babies and preschool children made in connection with the Philadelphia Hospital and Health Survey it was found that 36, or 2.4 per 1,000 of the 14,420 babies examined in the health centers in 1928 had congenital defects of a type that would class them as orthopedic cripples; while of 5,696 children of preschool age, 13.9 per 1,000 examined were found to be crippled according to the ordinary usage of the term.¹

It is evident that the extent of the need for educating crippled children in special schools or classes in any community will depend upon the thoroughness of the work in finding the children and affording prompt medical and surgical care for those under six years of age. Experience has shown that at least 50 per cent of crippling conditions occurring at this period are curable if taken in time. Although finding children and securing adequate care during these years are primarily the responsibilities of agencies outside the school system, two constructive measures of very great importance to the school program of special education are: (1) the provision for the extension of the regular school census, or other special enumeration by school officers, to include all physically handicapped children from birth to twenty-one years of age; (2) a system of central registration of all such children in the educational department.²

The special surveys of crippled children have all been conducted primarily through the public and parochial school systems. The proportion of children of elementary school age has been large in every study. In Chicago, 69 per cent of the total number were between six and sixteen years of age; in New York State, 53 per cent were between seven and fourteen; in New Jersey, 56 per cent were between

¹ The preschool children examined were a more selected group than the infants from the standpoint of health, as it is the policy of the Bureau of Child Hygiene to continue under care after the first years of life only children needing supervision because of some defect or illness. (*Phila. Hospital and Health Survey, Report, 1928*, pp. 323-324).

² Legislation providing for the extension of the school census to include all crippled children from birth to eighteen years of age has been enacted in Michigan and New York; in New Jersey, where there is no regular school census, superintendents and attendance officers are required to find and report annually all crippled children from birth to eighteen years of age.

seven and fifteen; in Wisconsin, 43 per cent were between seven and fourteen. Much smaller percentages were found in the secondary school group in all cases; in Chicago, 12 per cent were between sixteen and twenty-one; in New York State, 22 per cent between fourteen and eighteen; in New Jersey, 12.3 per cent were of sixteen, seventeen, and eighteen years, and in Wisconsin, 27 per cent between fourteen and twenty-one.

It would be heartening if these figures might be taken to indicate that by the time the children reached high school age they had so far recovered that they were no longer enumerated as crippled. Unfortunately, judging from the very meager follow-up studies that have been made, and from the experiences of employment agencies, the evidence is that in far too many cases these children have dropped out of school and been lost sight of because of inadequate methods of follow-up. Educational opportunity for crippled children frequently ends with the grammar grades because no provision for high school classes is made in special schools, and the regular high schools are not provided with elevators.

Sex Distribution

This is important from an administrative standpoint chiefly in its bearing upon the provision of special facilities for vocational training and placement in employment. In statistics relating to adult cripples "there is a marked preponderance of males," but this does not hold true for children, the percentages of boys and girls running very close in all of the studies and in school enrolments, with an increase for boys of about 4 to 6 per cent.

Race and Nationality Distribution

Statistics relating to the incidence of cripples among children of different races and nationalities are very limited. In Cleveland (1916) 97 per cent of the cripples of all ages were white; in Chicago (1924) 93 per cent of the children discovered were white. The house-to-house canvass of 100

blocks made in connection with the Philadelphia Hospital and Health Survey (1929) found that 14.8 of the crippled children under twenty-one were colored. In Baltimore, Washington, and St. Louis, the only cities which have reported separate special class units for white and colored children, the relative enrolments were:

	White	Colored	
Baltimore...	201	70	School year 1928-1929
St. Louis.....	200	43	School year 1928-1929
Washington, D. C.	39	31	February 15, 1930

Dr. Heck found in his study of the relative numbers of white and colored children enrolled in the special classes of 27 cities, that the percentage of colored children was small. The cities were located in the North Central, Middle Atlantic, New England and Western states; 9 schools reported no colored children; only 5 had 10 per cent or over; 2 schools reported 20; 23 per cent of total enrolment were colored.¹ There has been some evidence in reports sent to the Committee that the opportunities afforded in special classes for white children are not open in all cases to colored children, even in the north.

Dr. Heck found that of 36 schools, 12 reported that they had no children of foreign birth. Nine schools reported from 1 to 5 per cent foreign born; 7 reported over 5 per cent, the highest percentage for the 7 being 11 1/9 per cent. The percentages of children of foreign parentage were much higher, one school reporting as high as 96 per cent. No school reporting had as high a percentage of native-born children of native whites as of native-born children of foreign parents, but there were more schools with a high percentage of the former.² In the Cleveland Survey it was found that the proportion of foreign born of different nationalities among cripples of all ages "seemed, on the whole, to be in keeping with the numerical distribution of these nationalities in the general population."³

¹ Heck, Arch O. *Public Schools and Classes for Crippled Children as Reported by 27 Cities in the U. S.* Manuscript.

² *Op. cit.*, p. 44.

³ Cleveland Survey, p. 24, n.

The welfare of the crippled child in the home of foreign parents is sometimes jeopardized by the old world attitude of hopelessness for any future, save that of begging. Reports from cities in which the foreign population is large emphasize the need for better care of crippled children in parochial schools. In a few cities doctors and public health nurses have charge of children in both the public and parochial schools, and through a system of central registration these children are brought and kept under supervision. A program of publicity in the foreign language press carefully worked out with leaders in each national group is suggested. Immigrant parents, who rarely employed a doctor in the old world, do not readily differentiate in this country between the regular physician and the advertising doctor whose extravagant claims appear in the foreign language and other newspapers. This situation is particularly disastrous for the child crippled at birth or during the earlier years when he can be kept from the notice of neighbors, or of social or nursing agencies.

Enumeration

Provisions for the systematic enumeration of crippled children are very generally inadequate. The chief methods under the laws of the different states are: through the regular school census; by special survey or census, either through the school system alone or in cooperation with outside agencies; through local or district diagnostic clinics; through the reporting of crippling conditions on birth records; and by the parental registration of physically defective children.

Enumeration of crippled children in connection with the regular school census is provided by law in Arkansas, Kansas, Maryland, Michigan, Minnesota, Nebraska, New York, North Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee and Washington; may be made under administrative order of the state department of education or state superintendent in Arizona, California, Colorado, Georgia, Indiana, Maine, Massachusetts, Montana, Nevada, New Hampshire, Utah, and Vermont. States that

have provided for special survey or census are Arkansas, California, Florida, Illinois, Iowa, Kansas, Kentucky, Massachusetts, Michigan, New Jersey, New York, North Carolina, Ohio, Tennessee and West Virginia. Local and district diagnostic clinics have been provided for in Arkansas, California, Florida, Kansas, Kentucky, Maryland, Michigan, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Vermont, West Virginia, and Wisconsin. The states requiring the reporting of crippled children at birth are Minnesota, Mississippi, New Jersey, New York, Ohio, South Dakota and Wisconsin. Annual registration of crippled children of school age by parents is required in Colorado, Oregon and Maryland.

The enumeration of physically defective children with the regular school census is a proper administrative function and offers a valuable opportunity for early and regular contact with the family of the crippled child when taken systematically. It is inadequate, however, as the sole method because it is taken only once a year at best, in some states biennially or quadrennially, and in some instances only at irregular intervals. Lack of training or experience in recognizing crippling conditions on the part of enumerators, and difficulty in defining the term *crippled* have operated to lessen the value of this method. Since the extent of the school program depends so largely upon the care in early years, it is essential that school authorities participate in other community programs for discovering children.

Exemption from Compulsory Education

It is especially unfortunate for crippled children that the laws and administrative policies governing exemption from compulsory school attendance in many states class mental and physical defect together. This causes great hardship in the case of the child crippled from lesion of the central nervous system. Demonstrations that a larger percentage of these children are educable than was formerly believed and discovery of high intelligence quotients among spastic chil-

dren, have led to general recognition of the fact that they have been terribly neglected.

In his study of laws and methods governing exemption of handicapped children from compulsory education, Jesse W. Steiner found that only seventeen states required a physician's certificate. The board of education, attendance officers, superintendents, and others, are asked to pass upon the disability in other states. In New York, the law specifies that any condition capable of improvement shall not suffice as an excuse, and in Connecticut, the law requires that a child so exempted shall be immediately brought to the attention of the secretary of the state board who shall provide for protection and training.¹

SPECIAL EDUCATION

Provisions

By what is believed to be a very conservative estimate, there are more than 300,000 crippled children in the United States, and that at least one-third of these are in need of special educational opportunities. While the available statistics relative to the number of children who are receiving the benefit of the special facilities and services essential to their educational progress are not complete, there is reason to believe these present a fair picture of the general situation throughout the country. According to these findings there are less than 15,000 children receiving special educational care, and there are possibly some thousands for whom no educational opportunities are provided.

Special educational facilities are afforded to crippled children under different systems in the several states. In point of number of children enrolled during the school year 1928 to 1929, the chief method used is special schools and classes, under the administrative supervision of local boards of education and supported wholly or in part from public school

¹ Steiner, Jesse W. *The Legal Provisions for the Education of Crippled and Feeble Minded Children in the Forty-Eight States*. (Thesis) Ohio State University, 1928. Manuscript, pp. 18-21.

funds. State-supported hospital schools and other state-wide and local residential schools receiving state subsidies provide for the next largest number, while private day schools, residential schools, and convalescent homes are affording educational programs for the smaller numbers under their care. Classroom, ward group and bedside teaching are now carried on in hospitals and convalescent homes for crippled children. In state university hospitals the educational work is conducted in connection with the college of education in some cases, in others, it is under the supervision of the local school board which furnishes teachers and educational supplies; in Shriners' hospitals it is under the local board. More facilities for teaching convalescent children are being afforded in children's and in other orthopedic and general hospitals so that the children may not fall behind their classes in special or regular schools during long periods of hospitalization. Home teaching is now provided in many places, either independently where no other facilities are offered, or in connection with the special school program.

State Laws and Programs

Special public schools and classes for crippled children have been established or, having been established prior to the passage of the state law, are now maintained under the laws of fourteen states. The provisions of the statutes differ in many respects. The Appendix in this report contains a full summary covering the main features of the legislation and development in the several states as indicated by reports on the status of work for the school year 1928 to 1929.

In Centralized Institutions

In five states, New York, Massachusetts, Minnesota, Nebraska, and North Carolina, educational programs are provided in state hospitals for crippled children; in Connecticut, the Newington Home for Crippled Children, a state-wide institution under private administration, is subsidized by the state. In the hospitals associated with the

medical schools of the state universities of Iowa, Michigan, Indiana, Oklahoma, Missouri, and Oregon, academic instruction in classrooms or in wards is provided, and in a few cases some prevocational training is afforded.

While the general character of the educational work in centralized hospitals is determined largely by the fact that all pupils are patients, its scope in the different institutions depends also upon the primary purpose of the hospital in the general state scheme of care and education, and upon local facilities for education. Waiting lists at hospitals for operative care preclude retaining children for the prolonged periods of convalescence usually required in orthopedic cases. In these hospitals the educational work is irregular due to part-time attendance, withdrawals from classes, and the necessity for repeated classes during the day in the same subjects. In general, the aim of hospital teaching is its therapeutic value and its aim to prevent the child's falling behind in his regular school or special class.

The number of teachers employed and the average daily attendance in relation to the total yearly enrolment for instruction indicate in a general way the differences in the scope of the educational programs of the central hospital schools and university hospitals. These differences are shown in Table 2.

In Local Public School Systems

Special educational facilities for crippled children provided by local public school systems in communities of different types include:

Special schools, or special school units in the larger cities

Special classes in regular school buildings in smaller cities and towns

County unit schools, or town and county combined, the rural children being cared for in boarding homes

Transportation to regular classes in communities of all types

TABLE 2

TOTAL ENROLMENT, AVERAGE DAILY ATTENDANCE, AVERAGE MONTHLY ATTENDANCE, AND NUMBER OF REGULAR AND STUDENT TEACHERS IN STATE HOSPITALS FOR CRIPPLED CHILDREN AND IN HOSPITALS ASSOCIATED WITH STATE UNIVERSITY MEDICAL SCHOOLS FOR THE YEAR 1928-1929

Name of hospital	Total enrolment	Average monthly attendance	Average daily attendance	Number teachers	
		Per cent	Per cent	Regular	Student
New York State Reconstruction Home.....	205	91	91	10	—
Massachusetts State Hospital School.....	240	205.85	194.83	7	—
Gillette State Hospital, Minnesota.....	327	180	135	8	—
Nebraska State Orthopedic Hospital.....	102	99	99	5	—
North Carolina Orthopedic Hospital.....	143	no record	22.25	2	—
Iowa State University Children's Hospital.....	837	642	37	2	21
Michigan University Hospital.....	250	150	150	4	—
				(part time)	
				6	
				(full time)	
Indiana University Hospitals, James Whitcomb Riley.....	304	22.9	23	2	—
Oklahoma Hospital for Crippled Children.....	"Variable"		—	2	—
Missouri University Hospital.....	—	—	—	"Bedside instruction given by teachers from elementary and high schools."	
Doernbecher Memorial, Hospital of the University of Oregon.....	73	—	5	1	(All bedside teaching.)

Notes: Each of these hospital schools and university hospitals reported waiting lists on March 1, 1930. The New York State Reconstruction Home, 20, with an additional list at the State Capital; Massachusetts Hospital School, "Always a few"; Gillette State Hospital School, 260; Nebraska Orthopedic Hospital, 48; North Carolina Orthopedic Hospital, 306; Iowa State University Hospital, 221 new cases; James Whitcomb Riley, 50; Oklahoma Hospital for Crippled Children, 56.

See Appendix, p. 90.

Classes and bedside instruction in local hospitals and convalescent homes

Home teaching for both city and rural children unable to be transported to classes.

The report on the extent and nature of educational care afforded crippled children in local public school systems has been compiled chiefly from the data furnished in the questionnaires returned from 97 different teaching centers, that is: special schools, special school units, and special classes in 19 states and the District of Columbia. This has been supplemented by data from published reports and information given directly to the Committee by state and local departments of education.

SPECIAL PUBLIC DAY SCHOOLS AND CLASSES

The extent of the development of special educational provisions for crippled children in public day schools and classes is indicated in Tables 3 and 4, showing the number and distribution of classes in the special and regular schools of communities in six different population groups. The classification of cities has been determined largely by the evidence that the practical problems of organization and administration met in communities in each of these groups would be much the same, and would be typical of those to be met in organizing classes in other places of approximately the same population.

In a few instances special classes under public school administration are housed in hospitals in order to be near the treatment center, but are attended by children from outside the hospital. In the present study a distinction has been made between hospital classes of this type and those for patients only, in order to avoid duplication in enumerating enrollments as far as possible. In many cases the child enrolled in a hospital class for patients only, might also be enrolled in a special class or under a home teacher during the same school year.

IN LARGE CITIES
ORGANIZATION AND ADMINISTRATION

In cities of 100,000 population and over the methods of meeting the practical problems of organization have passed the experimental stage and are fairly well defined. The chief differences in policies and methods adopted by the larger cities of this group may be illustrated by the programs of three cities, New York, Philadelphia, and Chicago.

New York City

Education for crippled children is provided by the Board of Education in special public school day classes; in convalescent homes and hospitals; in two privately maintained special schools and through home teaching—all under the administrative supervision of the Physician of the Board of Education.

Crippled children are located and reported through the following methods of procedure:

Board of Health. Prompt notice of all poliomyelitis cases sent to designated officials; reports of all cases of cripples from health centers and clinics for babies and children of preschool age.

School System. Health certificates for all new entrants to school; daily morning hygiene inspection of all school children by regular class teachers; annual health day, when all children are examined for definite defects by the class teacher, the school medical inspector, and officials from the Department of Health Education; reports from the Bureau of Attendance; reports of children of school age discharged from all hospitals, clinics, and convalescent homes; reports from private physicians and surgeons of children under care; and from all types of social agencies. Children so reported are registered in the office of the physician of the Board of Education.

The definite policy of locating special classes and special units of several classes, in different neighborhoods, has been

TABLE 3

SPECIAL SCHOOLS AND CLASSES FOR CRIPPLED CHILDREN UNDER THE ADMINISTRATION OF LOCAL BOARDS OF EDUCATION IN CITIES, TOWNS, AND COUNTIES. NUMBER OF CLASSES, ENROLLMENT FOR THE YEAR 1928-1929. MEMBERSHIP AND TOTAL NUMBER OF TEACHERS AND SPECIAL WORKERS EMPLOYED AS OF FEBRUARY 15, 1930

Cities of 100,000 and over	NUMBER OF CLASSES IN			TOTAL ENROL- MENT 1928- 1929	MEMBERSHIP, NUMBER OF TEACHERS, TRAINED WORKERS, GIVING REHABILITATION SERVICES. OTHER SPECIAL WORKERS, AND ATTENDANTS, AS OF FEBRUARY 15, 1930													
	Special Buildings	Regular School Buildings	Other Buildings		Teachers				Rehabilitation Workers			Other Special Workers				Attend- ants		
					Academic	Speech	Industrial	Commercial	Physio- therapy	Occupational Therapy	Nurses	Visiting Teachers	Vocational Advisors	Home Teachers	Hospital Teachers			
San Francisco.....	5	—	—	82	77	5	1	2 pt	—	1	—	1	—	—	1	5	—	1
Los Angeles.....	—	8	—	160	164	8	1 pt	—	—	—	4	—	—	—	—	14	—	4
Long Beach, Cal.....	—	—	1	154	18	1	—	—	—	2	—	—	—	—	—	1	—	—
New Haven, Conn.....	—	—	—	16	16	1	—	—	—	—	—	—	—	—	—	—	—	—
Washington, D. C.....	—	4	—	—	70	4	1 pt	3 pt	—	1	—	—	—	—	3	—	—	2
Chicago, Ill.....	46	17	—	1845	1597	63	4	9	2	16	3	12	—	1 pt	—	7	45	37
Indianapolis, Ind.....	—	2	—	47	47	3	—	—	—	1	—	—	—	—	—	2	—	—
Fort Wayne, Ind.....	1	—	—	10	8	1	—	—	—	—	—	—	1	—	—	—	—	—
South Bend, Ind.....	—	1	—	—	8	1	—	—	—	—	—	—	—	—	—	—	—	—
Louisville, Ky.....	—	—	1	74	27	1	—	—	—	Treat. in Hosp.	—	1	—	—	5	3	—	—

TABLE 3 (Cont.)

SPECIAL SCHOOLS AND CLASSES FOR CRIPPLED CHILDREN UNDER THE ADMINISTRATION OF LOCAL BOARDS OF EDUCATION IN CITIES, TOWNS, AND COUNTIES. NUMBER OF CLASSES, ENROLLMENT FOR THE YEAR 1928-1929. MEMBERSHIP AND TOTAL NUMBER OF TEACHERS AND SPECIAL WORKERS EMPLOYED AS OF FEBRUARY 15, 1930

Cities of 60,000 to 100,000	NUMBER OF CLASSES IN			TOTAL ENROLLMENT 1928-1929	MEMBERSHIP, NUMBER OF TEACHERS, TRAINED WORKERS, GIVING REHABILITATION SERVICES, OTHER SPECIAL WORKERS, AND ATTENDANTS, AS OF FEBRUARY 15, 1930														
	Special Buildings	Regular School Buildings	Other Buildings		Teachers				Rehabilitation Workers			Other Special Workers				Attend-ants			
					Membership	Academic	Speech	Industrial	Commercial	Physio-therapy	Occupational Therapy	Nurses	Visiting Teachers	Vocational Advisors	Home Teachers	Hospital Teachers	Bus	School	
Sacramento, Cal.....	2	—	—	12	16	2	—	—	—	—	—	—	—	—	—	—	—	—	—
Cicero, Ill.....	—	9	—	70	105	9	HS	HS	—	—	1	—	—	—	—	—	—	3	3
Rockford, Ill.....	—	2	—	20	20	1	—	—	—	—	—	—	—	—	—	—	—	—	—
Springfield, Ill.....	—	1	—	20	17	2	—	—	—	—	—	—	—	—	—	—	—	—	1
Pontiac, Mich.....	—	1	—	19	20	1	—	—	—	1	—	—	—	—	—	—	—	—	—
Saginaw, Mich.....	—	2	—	30	26	2	—	—	—	1	—	—	—	—	—	—	—	—	—
Bayonne, N. J.....	—	1	—	37	37	1	—	—	—	—	—	—	—	—	—	—	—	—	1
Binghamton, N. Y.....	—	3	—	48	48	2 ft	—	—	—	—	—	—	—	—	—	—	—	—	—
Springfield, Ohio.....	—	2	—	36	36	1 pt	—	—	—	—	1	—	—	—	—	1	—	—	—
Total.....	2	21	—	292	324	22 ft	—	—	—	—	4	—	—	—	—	1	2	3	5

Cities of 30,000 to 60,000

Cities of 30,000 to 60,000									
San Bernardino, Cal.	1	5	5	—	—	—	—	—	—
Battle Creek, Mich.	1	18	18	1	—	—	—	—	—
Bay City, Mich.	1	16	15	1	—	—	—	—	—
Darborn, Mich.	1	30	22	2	—	—	—	—	—
Hamtramck, Mich.	3	95	68	3	—	—	—	—	—
Highland Park, Mich.	—	—	30 Est	2	—	—	—	—	—
Jackson, Mich.	2	18	18	1	—	—	—	—	—
Janssen, Mich.	1	14	14	1	—	—	—	—	—
Muskegon, Mich.	1	17	19	1	—	—	—	—	—
Port Huron, Mich.	1	18	17	1	—	—	—	—	—
Hoboken, N. J.	1	10	10 Est	1	—	—	—	—	—
Hamilton, Ohio	—	11	11	1	—	—	—	—	—
Lima, Ohio	1	14	14	1	—	—	—	—	—
Lorain, Ohio	1	14	14	1	—	—	—	—	—
Mansfield, Ohio	1	21	15	1 ft	—	—	—	—	—
Marion, Ohio	—	—	—	1 pt	—	—	—	—	—
Newark, Ohio	1	18	18	1	—	—	—	—	—
Steubenville, Ohio	1	12	12	1	—	—	—	—	—
Warren, Ohio	1	9	9	1	—	—	—	—	—
LaCrosse, Wis.	1	26	22	1	—	—	—	—	—
—	—	20	20	1	—	—	—	—	—
Madison, Wis.	1	19	19	1	—	—	—	—	—
Sheboygan, Wis.	1	19	19	1	—	—	—	—	—
Kenosha, Wis.	2	50	50	2	—	—	—	—	—
—	—	—	—	1 pt	—	—	—	—	—
Total	1	26	442	27 ft	1	1	1	1	1

TABLE 3 (Cont.)

SPECIAL SCHOOLS AND CLASSES FOR CRIPPLED CHILDREN UNDER THE ADMINISTRATION OF LOCAL
BOARDS OF EDUCATION IN CITIES, TOWNS, AND COUNTIES. NUMBER OF CLASSES, ENROL-
MENT FOR THE YEAR 1928-1929. MEMBERSHIP AND TOTAL NUMBER OF
TEACHERS AND SPECIAL WORKERS EMPLOYED AS OF FEBRUARY 15, 1930

Cities of 10,000 to 30,000	NUMBER OF CLASSES IN			TOTAL ENROL- MENT 1928- 1929	MEMBERSHIP, NUMBER OF TEACHERS, TRAINED WORKERS, GIVING REHABILITATION SERVICES. OTHER SPECIAL WORKERS, AND ATTENDANTS, AS OF FEBRUARY 15, 1930													
	Special Buildings	Regular School Buildings	Other Buildings		Membership	Teachers				Rehabilitation Workers			Other Special Workers				Attend- ants	
						Academic	Speech	Industrial	Commercial	Physio- therapy	Occupational Therapy	Nurses	Visiting Teachers	Vocational Advisors	Home Teachers	Hospital Teachers	Bus	School
Centralia, Ill.....	—	—	1	6	9	1	—	—	—	—	—	—	—	—	—	—	1	—
Hasel Park, Mich.....	—	1	—	27	25	2	—	—	—	—	—	—	—	—	—	—	1	—
Holland, Mich.....	—	2	—	25	25	2	—	—	—	—	—	1	—	—	—	—	—	—
Mt. Clemens, Mich.....	—	1	—	15	12	2	—	—	—	—	—	—	—	—	—	—	—	—
Royal Oak, Mich.....	—	1	—	16	16	1	—	—	—	1 pt	—	—	—	—	—	—	—	—
Ypsilanti, Mich.....	—	—	—	17	17	1	—	—	—	—	—	—	—	—	—	—	—	—
Alliance, Ohio.....	—	1	—	10	14	1	—	—	—	—	—	1	—	—	—	—	—	—
Barberton, Ohio.....	—	1	—	14	12	1	—	—	—	—	—	1	—	—	—	—	—	—
Cambridge, Ohio.....	—	—	—	14	15	1	—	—	—	—	—	—	—	—	—	3 pt	—	—
Campbell, Ohio.....	—	1	—	18	20	1	—	—	—	—	—	—	—	—	—	—	—	—
Elyria, Ohio.....	—	—	—	11	11	1	—	—	—	—	—	—	—	—	—	—	—	—
Lancaster, Ohio.....	—	1	—	8	9	1	—	—	—	—	—	—	—	—	—	—	—	—
Martins Ferry, Ohio.....	—	1	—	13	16	1	—	—	—	—	—	—	—	—	—	—	1	—
Masillon, Ohio.....	—	1	—	11	14	1	—	—	—	—	—	—	—	—	—	—	4	1

Piqua, Ohio.....	—	1	—	14	11	1	—	—	—	—	—	—	—	—	—	1	1
Sandusky, Ohio.....	—	2	—	31	30	2	—	—	—	—	—	—	—	—	—	—	1
Zanesville, Ohio.....	—	1	—	15	15	1	—	—	—	—	—	—	—	—	—	—	—
<i>Total</i>	—	18	1	249	268	21	—	—	—	—	1 pt 2 ft	1	9	—	—	3	8
Towns of under 10,000																	
Herrin, Ill.....	—	2	—	35	30	2	—	—	—	—	—	—	—	—	—	—	—
Murphysboro, Ill.....	—	1	—	18	18	1	—	—	—	—	—	—	—	—	—	—	—
Dowagiac, Mich.....	—	1	—	9	10	1	—	—	—	—	—	—	1	—	—	—	—
<i>Total</i>	—	4	—	62	58	4	—	—	—	—	—	—	1	—	—	—	—
County-wide Schools																	
Marion, Ill.....	—	3	—	56	26	3	—	—	—	—	—	—	1	—	—	—	—
Barnesville, Ohio.....	—	2	—	25	20	2	—	—	—	—	—	—	—	—	—	2	2
<i>Total</i>	—	5	—	81	46	5	—	—	—	—	—	—	1	—	—	2	2

Classification of Cities has been revised according to United States census 1930 data except in the case of Cambridge, Campbell, Massillon, and Zanesville, Ohio, for which the 1930 figures were not available. For these cities, the United States census estimate of 1926 was used.

In several instances estimates of membership on February 15, 1930, have been given where exact figures were not given in the questionnaires. In all cases these estimates are conservative and were made upon the basis of supplementary information.

The classes in Long Beach, California; Louisville, Kentucky; and Pittsburgh, Pennsylvania, have been included in this list, although in Long Beach and Louisville they are housed in hospitals, and in Pittsburgh in a private home. In all these cases it appears that the classes are open to children who are not patients or residents, so that the classes which in each case are under public school administration are much more of the character of the public school day class than of the hospital class for patients only. There is no chance of duplication of enrolment.

pt means part time; ft means full time; Vol. means volunteer; est. means estimated.

^a *St. Louis, Missouri.* Data except for enrolment 1928-1929 and number of classroom teachers are for the Charles H. Turner School only.

^b *New York City.* There were 365 crippled children enrolled in regular high schools. See full report p. 37.

SPECIAL EDUCATION

TABLE 4

DISTRIBUTION OF SPECIAL CLASSES FOR CRIPPLED CHILDREN IN CITIES, TOWNS, AND COUNTIES. TOTAL ENROLMENT FOR THE SCHOOL YEAR 1928-1929. MEMBERSHIP FEBRUARY 15, 1930, IN CLASSES ESTABLISHED SEPTEMBER, 1929, OR AFTER

Size of Cities (U. S. Cities, Census 1930 Preliminary Reports)	towns, counties	NUMBER OF SPECIAL CLASSES IN BUILDINGS			Enrolment	Membership
		Special	Regular School	Other		
100,000 and over	41	191	215	8	8578	182
60,000 to 100,000	9	2	21	—	292	—
30,000 to 60,000	23	1	26	—	442	62
10,000 to 30,000	17	—	18	1	249	16
Under 10,000	3	—	4	—	62	—
County-wide Schools	2	—	5	—	81	—
<i>Total</i>	95	194	289	9	9704	260

determined upon in order to bring the classes nearer the children's homes and to keep down maintenance and transportation costs. Owing to the small number of crippled children, there are never more than two or three rooms in a school devoted to their use and so there are often three or more grades in the same room under one teacher.

Children are eligible for special classes if they cannot attend regular classes with safety and profit to themselves and others. During the school year 1928 to 1929 there were 90 special day classes in the public schools with a total enrolment on March 1, 1929, of 1,780 pupils; 42 classes in convalescent homes and hospitals with an enrolment of 786 pupils; 365 crippled children in regular high schools, and 89 teachers were employed in instructing 537 children in their own homes.¹

The ratio of crippled children in public schools in 1929 was as

¹ "There were 537 home-bound cripples receiving instruction from 89 visiting teachers divided into two groups: (a) 64 home teachers who gave instruction for four and one-half hours per week; (b) 25 after-school teachers who gave instruction three times a week, largely in high school subjects. At present, unfortunately, there are approximately 400 home-bound children on the waiting list for teachers, and it is hoped there will soon be sufficient funds to provide instruction for all crippled children in the city." (*Citizens Look at the Schools*, Women's City Club of New York, June, 1930.)

follows: 22 children in every 10,000 in public school classes; 11 in every 10,000 in hospital classes; 21 in every 10,000 afforded high school transportation; 41 in every 100,000 (including children in special classes in public schools, in hospitals and convalescent homes, and home-bound crippled children) were having home instruction.

The Board of Education provides for the children's physical care by furnishing transportation, under the supervision of attendants, and special furniture for safety and comfort in the classroom. In some schools hot lunches are served, while in others children bring sandwiches; milk is sold at a reduced price through the generosity of a private philanthropic organization. In some schools a room is set aside where a nurse, supplied by a private organization, gives massage and treatments under medical supervision.

Specialized physical training is part of the public school program; physiotherapy and other orthopedic after-care treatments are provided by outside medical agencies, the classes being associated with the clinics of hospitals and dispensaries. Crippled children in regular classes receive orthopedic treatment and physiotherapy through the same sources as those used by children in special classes, and since all existing agencies are used by both groups, there is no duplication of service in school buildings. Budgetary allowances are for education only; the greatest cost is the salary of specially trained teachers, the maximum being \$3,850.

In high schools and trade schools, crippled children have an opportunity to use their ability in a miniature world while receiving their education with normal children in the same classes, but with a definitely adjusted health program.¹

Los Angeles and Philadelphia are among the cities providing special educational facilities for comparatively large numbers of crippled children by the same general methods as those of New York City. In Los Angeles, during the period from September, 1929, to February, 1930, there were 99 children in elementary classes and 56 in high school classes, in public schools; 245 in hospital classes, and 292

¹ Information from Physician of the Board of Education, March, 1930.

having home instruction under public school administration. Provisions for orthopedic after-care are limited to the hospitals. Occupational therapists under the Department of Health and Physical Education work in the public school classes, three in the elementary classes, and one in high school.

Philadelphia

The City School Board makes provision for crippled children in five regular school buildings in different sections of the city, as the city is so spread out that too long a time would be required in transportation if there were a central school for the entire group. Rooms on the first floor of these schools are used for crippled children whenever possible, and 3, 4 or 5 classes are placed in a school so that they can be graded. A special school is now being planned to meet the needs of children in one section of the city.

The Division of Special Education of the Philadelphia Board of Education exercises general and instructional supervision over special classes for crippled children. Medical supervision is exercised by the Division of Medical Inspection, and includes: (a) nomination for admission to and discharge from special classes; (b) special medical records; (c) contact with hospital clinics; (d) social service in the homes of poorer families. Wherever conditions make it possible classes are gathered into schools under separate principals.

The special school units in Philadelphia include classes for several types of handicapped children. In one section of the city 5 classes are housed on the lower floor of an elementary school building which contains grades one to six, 2 restoration classes, and 5 classes for backward children. In another section of the city, 5 orthopedic classes are housed on the first floor of a building in which there is a nutrition class, 2 classes for the deaf, 4 restoration classes, and 10 classes for backward children. In another section, very much cut off by geographical barriers, 3 orthopedic classes are housed in a building in which there is also a group

of backward children. In all these instances the orthopedic classes have their own assembly rooms, shops, and lunch rooms, and their activities are in most cases separate from those of the other groups.

Children are admitted to the orthopedic classes if they are unable to walk or care for themselves physically in the regular schools.

The Committee on Special Classes reporting to the Philadelphia Hospital and Health Survey suggested that the present policy of admitting children on the basis of inability to walk and climb stairs be extended to include all crippled children in need of medical treatment, and that other factors to be considered were the child's need for individual instruction or psychological care.¹

During the year 1928 to 1929 the total enrolment in the 5 school centers was 621. On February 15, 1930, there were 29 classes in the 5 schools with a membership of 599, and 28 classroom teachers. There is provision for kindergarten classes and all of the elementary grades in each of these school units. High school pupils are transferred as individuals to senior and junior high schools if physical condition permits, and since these buildings are equipped with elevators, the children get around fairly well without the aid of crutches or wheel chairs. Teachers under the division of special education are on duty in local hospitals and convalescent homes. There is apparently no provision for instruction of crippled children in their own homes.

The special classes in Philadelphia are organized primarily for academic work, though physical care and vocational training enter into the school program. Children are transported by the Board of Education to hospitals fitted for all kinds of orthopedic after-care treatment as often as the hospital requires. Some treatment, such as massage and muscle training, is given in the schools under the instructions of the orthopedic surgeon in charge of the case, as this arrangement is found to give the pupil more time in school and also saves the cost of transportation. Lunches are pro-

¹ *Philadelphia Hospital and Health Survey Report, 1929, pp. 324-331.*

vided in school at the cost of ten cents a day, the parents paying if financially able.¹

Special schools or units which include classes for several types of handicapped children under a plan of organization similar to that of Philadelphia have been established in several cities of over 100,000 population. The new *Percy M. Hughes School* in Syracuse, New York, has been planned to provide units for crippled children and those having speech or hearing defects, or imperfect vision, in a building which includes a unit for normal children, so that the physically handicapped children may recite in the regular school classes whenever their physical condition or educational progress permits. In St. Louis, the *Turner School* for colored children cares for orthopedic, open air, sight conservation, deaf, and hard-of-hearing classes. In Des Moines, the new D. W. Smouse *Opportunity School* will care for orthopedic, open air, deaf and hard-of-hearing, sight conservation, and speech correction classes. From the standpoint of administration and provision of facilities for vocational training, these plans offer advantages in the care of children whose major disability is accompanied by some other physical defect. There are, however, psychological and practical considerations in the care of each type of defective child, and of normal children, that call for thoughtful study by school authorities concerned in the development of the program of education for each of these groups.

Chicago

Public school classes for crippled children are maintained by the Chicago Board of Education in four centers; two unit schools designed and equipped for crippled children, and two units in regular school buildings adapted for their care.

Immediate supervision is under the District Superintendent in Charge of Special Classes. Principals in the two special buildings give their entire time to crippled children;

¹ Information from Director, Division of Special Education, Philadelphia, March, July, 1930.

school units in regular elementary schools are under the principals of the buildings.

Children are admitted to special classes if they cannot attend regular classes with safety and profit. The possibility of improving the child's physical condition is a determining factor in many cases. A child is enrolled upon the recommendation of his attending physician or surgeon, and is dismissed upon his recommendation. This procedure makes it possible to maintain a settled policy of preventing the special classes from becoming crowded with children who would be better off in the regular classes.

During the year 1928 to 1929, there were 1,845 children enrolled in the classes of the four centers. On February 15, 1930, the membership in these classes was 1,597, and 63 full-time academic teachers were employed. There were also one full-time and 4 part-time speech teachers, 9 industrial and vocational, and 2 commercial teachers, 16 physiotherapists, and one occupational therapist. In local hospitals and convalescent homes there were 7 regular and 2 student teachers furnished by the Board of Education. No provision has been made for teaching crippled children in their own homes, as the settled policy is to have every child attend school if possible.

Some measure of the success in securing the attendance of crippled children in school is indicated by the findings of the Chicago Survey of Crippled Children in 1924. Among the 1,531 cases, 149 were not in school. Ninety-four of these were of compulsory school age, and of this number 41 had been rejected as mentally too subnormal; 13 were out of school because of temporary handicaps and would return; and 17 because of permanent disabilities such as, mental complications, epilepsy, and severe cardiac conditions. The remaining 23 were not in school for such temporary reasons as: "Referred, waiting for bus to call," 6; "Children just 6, parents prefer to wait another year," 8; "Moved or moving," 3; "Out of bus route," 2; "Unknown," 3; "Neglect," one.

There will, however, always be a small number who can-

not attend school for various reasons. The 1930 report of the district superintendent in charge of special classes carries the recommendation that the extent of the need for home teaching be studied at an early date.¹

The work of the special schools is organized in three departments: physical care; academic education; vocational training.

The plan of physical rehabilitation is put into practice through the endorsement and cooperation of the medical and surgical staffs of the city's chief hospitals and dispensaries, and the public health nursing organizations. Although the special schools and units have special rooms and equipment, and offer every kind of treatment in orthopedic after-care, the teachers take no initiative in prescribing such treatment. Every child enrolled is under the care of a private physician or surgeon, or registered in a clinic, dispensary, or hospital. To facilitate cooperation with these medical agencies, the Board of Education furnishes transportation to and from the various clinics where orthopedic surgeons examine the children from time to time and prescribe the course of treatment. Motor buses, built according to specifications furnished by the superintendent of schools, are completely equipped for comfort and safety, and children are accompanied by carefully selected and trained attendants. Physiotherapists and nurses, who carry on the treatment in school, accompany the children and receive their instructions for the care of the individual children from the physicians. They are responsible to the physicians, as well as to the superintendent of schools, for carrying out these instructions. This is very important as the nurses and physiotherapists see that the orthopedist's advice is explained to the parents who in many instances are ignorant or overburdened with work, and when after-care is left to their judgment or convenience, treatments are often interrupted and the child soon lapses into the original condition. Physiotherapists who work under the board of education must

¹ Chicago Board of Education. Annual Report of the District Superintendent in Charge of Special Classes, Chicago, June, 1930.

meet the national requirements, and fulfill those of the local board.

The following report on physical care for the school year 1929 to 1930, covering a total enrolment of 1,800 children in the special schools and units, indicates the extent of the services afforded by medical agencies, and the possibilities of the program of reconstruction through cooperation.

Physical care of children in special schools for crippled children, 1929 to 1930:

General physical examinations	1747
Orthopedic clinics attended by	
physiotherapists (with groups of children)	1038
Parents or attendants	427
Orthopedic consultations (individual)	4375
Medical consultations	2783
Hospitalization	
Paid	26
Free or part pay	94
Operations	100
Casts applied	93
Braces, shoes, (consultations on same)	912
Dental clinics	
Examinations	708
Operations (treatments)	1675
Eye, Ear, Nose and Throat	
Consultations	1073
Operations	51 ¹

Physicians and surgeons cooperating in the special school program recognize, not only that the therapeutic services afforded by the schools would not be available for such large numbers of children, even with the extensive hospital and clinical facilities of the city, but that the system tends to unify the services of all concerned in handling the children to their great benefit. The psychological values of the school atmosphere, and the strategic advantage in securing regularity of

¹ Annual Report of the District Superintendent in Charge of Special Classes, *op. cit.*

treatment through required school attendance are of utmost importance. With the current trend in orthopedic after-care to shorter periods of treatment at more frequent intervals, this advantage assumes increased significance.

Public health nursing organizations play an important rôle in the school program. The Visiting Nurse Association of Chicago with a staff of 21 graduate nurses, all of whom have had, or are having, special training in the theory and practice of physiotherapy, cooperates actively in the care of crippled children both within and outside the schools. One of its chief services consists in maintaining orthopedic after-care services in the homes of the children. During the year 1928 to 1929, full-time nurses were given to 3 public schools for crippled children. One nurse divided her time between 2 public grade schools, and 2 public high schools; 2 nurses gave part time to special physiotherapy treatments in 2 children's hospitals, and the remainder gave all of their time to field work with both crippled children and adults. A total of 21,801 treatments were given in schools and hospitals, and 36,024 visits were made in the homes of 2,130 patients, of whom practically two-thirds were children of school age, the majority requiring clinic service.

The Municipal Tuberculosis Sanitarium assigns nurses to the special schools for tubercular work in connection with orthopedic care. The main phases of their work consist in: nursing; supervision of nutrition groups; clinic consultation; field work to instruct mothers in diet, hygiene, and correction of deformity; violet-ray treatments.

The Chicago Heart Association provides the attending physicians for the cardiac groups in the schools. These children receive the same nursing care and supervision as the tubercular children. The unit schools are organized to give academic training on three levels:

Regular grades—nursery school and kindergarten through four years of high school.

Prevocational classes—children over fourteen years of age taken from the sixth, seventh, and eighth

grades; specialized training to meet individual problems.

Special classes for mentally and physically handicapped children. These are divided into three groups:

Beginners

Adolescents

(1) Potentiality—employment in industry

(2) Potentiality—mothers' helpers at home

Spastic children.

Academic standards maintained in each of the above groups are the same as those in corresponding groups in regular schools; children, however, are older for their grades. Complete programs for each of the three groups have been worked out in detail covering academic and shop work, for both boys and girls. These courses are flexible, as are the boundaries between the various groups. A boy or girl from the subnormal group may be placed in the prevocational group for some study or shop course, a prevocational pupil may be found in an eighth grade history class. Teachers in prevocational classes are trying to keep in touch with the local industries by visiting factories, shops, and offices with the placement worker from the Vocational Guidance Department of the Board of Education, in order to learn the requirements and opportunities in industry, and so make the training as practical as possible. Children are taken on visits to industrial plants. Sometimes an employer co-operates with the school by giving the pupil a trial in some line of work before he is encouraged to take intensive training in that line.¹

¹ From Monographs on the Chicago program prepared for the White House Conference: *Value of Rest in the Treatment of Infantile Paralysis*, by Jessie L. Stevenson; *Standards of Physiotherapy*, by L. M. Beckman; *Swimming for Handicapped Children*, by L. Dorothy Abbs; *Treatment of the Handicapped by Exercise under Water*, by Alice L. Plastridge; *Gymnasium Equipment in Schools for Crippled Children*, by Bess Searles; *Routine and Co-operation*, by Irma Walker; *Routine Work of M.T.S. Nurses*, by Jane Theiler; *Table Treatment in Poliomyelitis*, by Ida M. Hazenhyer; *An Experiment with Children with Lesion in the Central Nervous System*, by Mabel C. Smart; *The Jancil Shop*, by Anna Henry.

Special schools equipped to provide orthopedic after-care treatments have been established in San Francisco, Detroit, Minneapolis, St. Louis, Jersey City, Newark, Buffalo, Cincinnati, Cleveland, Columbus, and Dayton. While there are differences in policies and methods in these school programs, the main features of their work in physical care and academic education correspond with those of the Chicago program. In many cities the first floor or a wing of a regular school building has been designed or adapted for special class units and to provide facilities for special physical care. In twelve school units of this type, provision is made for at least one class in each of the elementary grades represented.

The Rochester Experiment

The experiment in Rochester, New York, may be taken as a demonstration of the scope of work that may be undertaken and results accomplished.

The unit of special classes for crippled children maintained by the Board of Education has been located in the wing of a regular elementary school building with the definite objective of providing for social contacts with normal children in the corridors, shops, practice house, and assemblies.

A child may be recommended by any orthopedic surgeon, but is admitted to the school only through the clinics held twice a week by school surgeons. The treatments given the child, however, are those his own physician wishes him to have. Special rooms and equipment for all kinds of orthopedic after-care are provided, and careful records of every phase of health work are kept; in most cases pictures are taken and preserved in the school.

The school department is graded as carefully as the small enrolment will allow. The total enrolment for the school year 1928 to 1929 was 188. On February 15, 1930, there was a number of 105. Six classroom teachers, one special speech, 3 industrial and vocational teachers, 6 physiotherapists, 2 nurses, one cook, and one helper, were em-

ployed. Children are admitted at four years of age. If pupils are to be discharged when they complete the 6A grade, they are sent to junior high school for it is felt that this larger contact and experience is needed; if not able to go, they are kept for seventh and eighth grades. Transportation is provided by means of buses and taxis. A warm meal is served at noon and extra milk during the day.

During the summer, the board of education conducts a summer school at the Rotary Sunshine Camp on Lake Ontario with a regular academic program, nature work, handwork, swimming, and scouting. After operative work, children are sent to the convalescent hospital where the board of education maintains 2 full-time teachers and one part-time teacher. During the year 1928 to 1929, 193 children went through the school clinic; 10 were operated upon, 1,194 were given various forms of treatment in school and outside.¹

Program in Smaller Cities

In cities of from 30,000 to 100,000 population, school units are organized in some cases to allow for the better grading of classes and more individual instruction, also to simplify the problem of transportation, no orthopedic after-care being undertaken by the schools.

EDUCATION IN RURAL DISTRICTS

The education of crippled children in rural districts is one of the newer movements in the field of special education. State-wide surveys of the distribution and condition of crippled children and the experiences of the local and regional clinics in rural districts of many states, have brought to light distressing facts as to the number of crippled children in isolated districts and in many instances their entire lack of educational opportunity. The number of crippled children to 1,000 general population has been found to vary

¹ Data from report sent to the Subcommittee, and also from *An Experiment for Orthopedic Children*, by Jessie M. Shedd, 1930, pp. 402-403.

from .10 to 6.19 in towns of less than 15,000 population, and from 2.4 to 8.3 in country populations. Studies in New York and Vermont, and experience elsewhere, indicate that the incidence of infantile paralysis is especially high in rural districts.

The state laws providing for special education of crippled children make provision in most cases for inter-district cooperation in establishing classes. They also provide transportation to, and in some instances maintenance, near a special class. The practicability of organizing classes in small towns and country districts, has been found to depend upon the limitation set by the law, the state department, or the local board, upon the minimum number for which a class may be organized. In the experimental work begun in several states may be found the expedients for providing academic education and physical care for rural children under different territorial and administrative conditions.

Methods Found Practicable

Methods that have been found practicable to date provide for:

1. County-wide classes centrally located to serve a whole county. This plan offers a satisfactory solution for health as well as educational care where there is a well organized health unit, and close co-operation between local health and welfare organizations in the school program. In Belmont County, Ohio, and in Marion, Illinois, experimental work in this type of organization is bringing to light the problems and the possibilities of this method.¹
2. Transportation to a regular school or to a nearby city that has established a special school.

¹ Brown, Paul V. *The Education of Crippled Children in Belmont County, Ohio*. Monograph prepared for the White House Conference. Conrad, C. W., *A Country-wide School for Crippled Children at Marion, Ill.*



Courtesy of Ann J Kellogg School, Battle Creek, Mich.

LIGHT TREATMENT ROOM IN THE ANN J. KELLOGG SCHOOL, BATTLE CREEK, MICHIGAN

The Ann J. Kellogg School is divided into three departments. Two of these, the elementary and junior high, were organized for normal children and include the greater percentage of the pupils enrolled. The third is a department of special education. The plan of the building and the program of work definitely express the ideals set forth in the White House Conference.



Courtesy of Ann J Kellogg School, Battle Creek, Mich.

THE REST HOUR IN A ROOM SPECIALLY EQUIPPED FOR IT IN THE ANN J. KELLOGG SCHOOL, BATTLE CREEK

A comprehensive development under this plan has been undertaken in Wisconsin both for children who need the physical care and services of the special class, and those who need only transportation to attend the regular schools. In Broome County, New York, the community organization to secure health care for all crippled children in special and regular schools is an outstanding demonstration of the practical solution of this difficult phase of rural care.¹

3. Maintenance in central hospital school for crippled children or in local public or private residential schools.

This method of care is now available in the five states having such institutions. In New York State, crippled children from rural districts receive care and education in the reconstruction homes for infantile paralysis cases in Ithaca and Elmira. In Vermont, children from remote districts, as well as children from unsuitable homes, are cared for at Ormsbee House, a small private home and school.²

4. Boarding the child near a city, or consolidated district, or county school class.

This method has been used more extensively in Ohio, Michigan and Wisconsin than in other states. Success depends largely upon the possibility of finding, or providing, standardized boarding homes. While taking the child from his own home is not to be generally recommended, it is found that in the

¹ Lison, Marguerite M. *Care and Education of Crippled Children, State of Wisconsin*, 1930. Endres, Joseph J. *Crippled Children in Broome County*. Monograph for the White House Conference, March, 1930. Allaben, Charles M. *Crippled Children Relief in Broome County*. N. Y. State Bd. of Education Dept., Jan., 1930.

² Kirkendall, Sarah M. *Reconstructing the Infantile Paralytic*. Hutchinson, Harvey O., *The Children's Reconstruction Home of Elmira*, pp. 411-412. Data from unpublished material in U. S. Children's Bureau, and from *Infantile Paralysis in Vermont*, Burlington, Vt. St. Dept. of Public Health, 1924.

case of the crippled child, removed from the narrow outlook of his home and the emotional attitude of his family and given the companionship of children of his own age who are handicapped as he is, he ceases to be the household tyrant and develops rapidly in self-control and initiative. For these reasons, home teaching for children in country districts is advocated only as "a very poor substitute for class teaching" (Ohio), or "a last resort" (Wisconsin), or "when no other method is feasible" (California).¹

5. Home teaching is advocated in rural communities in certain instances where other methods are not feasible.

The demand is growing for a standard program of five hours' instruction a week by a teacher employed for this special work rather than by regular teachers who give time after school. In many instances home teaching is provided as a temporary measure pending the organization of classes in rural communities.

SPECIAL SCHOOLS AND CLASSES

Housing

The local requirements for special schools or school units vary greatly, but features of design which experience has proved essential or certainly desirable, are as follows: wide corridors; easily accessible entrances and exits; ramps outside and inside the building; elevators in buildings of two or more stories; stairways, since this challenges effort on the part of the children who must be fitted for ordinary living conditions; a physical care center providing rooms for treatment, graduated exercises, warm lunches, and rest; rooms for prevocational and vocational training; auditorium;

¹ From reports of State programs cited.

library; and playrooms for the children whose opportunities for recreation outside the school are greatly restricted.¹

Location of Buildings

Emphasis has been placed upon the location of the special class as near as practicable to the homes of children to obviate the necessity of long bus rides, and to simplify the problems and reduce the expense of transportation. Accumulated experience has demonstrated, however, that with adequate provisions for safety and comfort, children are not at all injured by bus rides of considerable distances. Consideration in locating buildings and classes is now being turned toward proximity to clinics and to regular elementary and high schools, or to technical schools equipped with elevators, and affording opportunities for specialized training for older children.

Segregation

In discussions of the segregation of crippled children in special schools, much of the opposition to the plan seems to be based upon a misconception of its objectives. In the practice of the majority of the special schools, the child's membership is terminated when, in the opinion of the orthopedist in charge of his care, he no longer needs the specialized treatment or services of the special class. After-care treatment at certain stages of physical rehabilitation and mental adjustment is best carried on in a competitive atmosphere, but not against the heavy odds of the regular school in competition with children physically superior and mentally farther advanced. In the special school under a system of discipline based upon scientific understanding of physical and emotional needs, the crippled child is released from the consciousness of being different from others, of being twitted, or ignored, and is given the opportunity for developing the emotional and physical resourcefulness necessary to fit him for competition in the regular grades.

¹ Yardley, R. W. *School Buildings for Crippled Children*. Monograph on Special School Architecture (Bureau of Architecture), Chicago, 1930.

Eligibility

In the earlier history of special schools and classes for crippled children, admission was usually restricted to those unable to walk to school or climb the stairs in regular buildings. Defective locomotion is still the criterion of eligibility in a number of schools, but experience in cities where such classes have been established for some years has tended to broaden this policy of admission to include all children whose physical condition is capable of improvement under intensive medical treatment, and also those who require special services or instruction because of vocational, social, or psychological needs associated with the physical defect.¹

The criterion of eligibility to special classes observed in the majority of school systems is covered by the definition: "A child eligible to attend a special school (or class) for crippled children is one who, by reason of congenital or acquired defects of development, disease, or accident, is, or may be expected to become deficient in the use of body or limbs—an orthopedic cripple, who cannot attend regular classes with safety and profit during the period of his physical rehabilitation, simultaneous mental training and social adjustment." In practice this is found to include children:

For whom physicians and surgeons have recommended the daily care of nurses and physiotherapists

¹ The report on special classes to the Philadelphia Hospital and Health Survey Committee in 1929 contains the recommendation that in deciding on the facilities to be provided in the new special school in Philadelphia, consideration should be given to the "grade of medical treatment that the children with paralysis are obtaining while enrolled in regular classes, where medical treatment is just as possible, but far less likely. Social considerations also enter into the development of this policy. For instance, a child from a poor home attending school in a very congested section may need the care of a special class, whereas a child in a better neighborhood may get along quite well in an ordinary class. These are only a few of the points to be considered and suggest that a policy which means latitude for individual adjustment will be more effective than a blanket policy." *Philadelphia Hospital and Health Survey Report*, 1929, pp. 324-325.

- Who must have transportation service to reach school or special attendance at school
- Who, because of retardation due to prolonged absences, are in need of individual instruction
- Who, because of home conditions, need special care
- Who cannot profit in the regular schools because of psychological or emotional conditions
- Who need specialized attention in vocational guidance, training, and placement
- Who are crippled by cardiac complications
- Who require plastic surgery that is usually followed by muscle training.

The number and the types of children considered eligible to special classes in different cities depends to a great extent upon the local policy with regard to accepting supervision of treatment as a school responsibility; upon facilities provided in the regular school health program and physical education department for orthopedic care of children in regular classes, and upon the services and facilities available for after-care treatment by local hospitals, clinics, and public health nursing organizations. While children are seldom admitted upon the basis of vocational needs alone, they are often retained for that reason because of the better opportunity afforded for studying their tastes and aptitudes in the light of their physical capabilities than is afforded in regular schools.

Methods of Selection

The method of selecting children for admission to special classes is usually determined by the administrative organization of the local school system. State legislation and administrative policies also enter into the methods of selecting children. In a number of the larger school systems, children are admitted only on the recommendation of the orthopedic surgeon appointed by the board of education or the department of health. Among cities following this plan with slight variations in procedure are: Detroit, San Francisco,

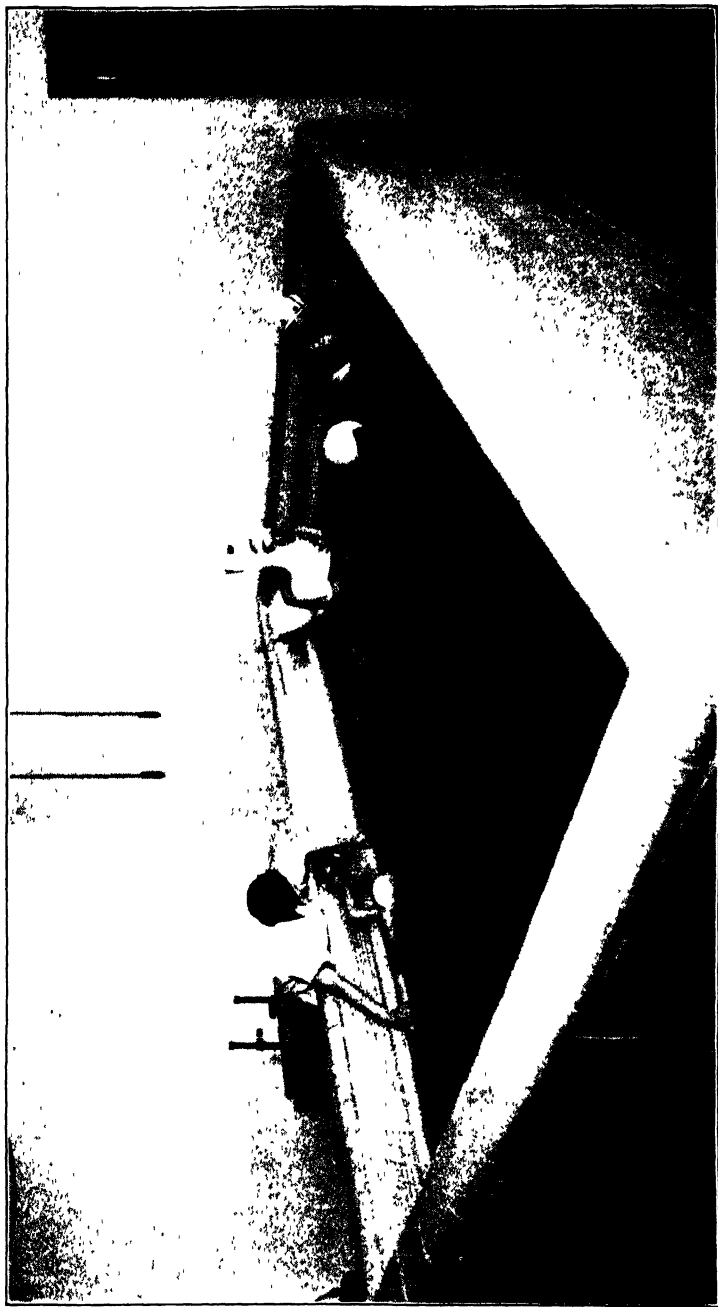
Minneapolis, St. Louis, Rochester and Binghamton, New York City, Cleveland, Philadelphia, and Akron. In most cases where this plan is followed, the child who is recommended for special class care by the private or clinic physician or surgeon receives treatment in the physiotherapy department of the school under his instructions. In cities where no orthopedist is employed by the board of education (and this applies to many of the larger cities and practically all of those in the smaller population groups) children are admitted upon recommendation of their own physicians and surgeons, or that of orthopedic specialists in local clinics and hospitals who cooperate in the school program, or serve in an advisory capacity. In practically all schools, final determination as to the child's eligibility depends upon the results of mental and psychological tests made in school or outside clinics, and upon consideration of many individual factors by the principal or head teacher. In Detroit, the Department of Research and Adjustment of the Board of Education assigns children to special classes upon the basis of study of individual needs.

Organization

The fundamental idea in the special educational care of crippled children, is to reduce the physical disability of each child just as far as possible and then give him the education and training and all the help of which he may stand in need in order that he may be able to earn his living in some calling to which he is particularly adapted. For this reason, the special schools and units are organized in three departments: physical care, academic education, and vocational training.

Physical Care

Provisions for physical care found in practically all special schools and classes include transportation, special attendance, classroom equipment for safety and comfort, supervision of feeding, directed rest and recreation. Orthopedic after-care, first undertaken as a public school function



Courtesy of Ann J Kellogg School, Battle Creek, Mich.

TREATMENT OF THE HANDICAPPED UNDER WATER IN A SWIMMING TANK IN THE ANN J. KELLOGG SCHOOL, BATTLE CREEK



Courtesy of Ann J Kellogg School, Battle Creek, Mich

CORRECTIVE GYMNASTICS IN A SPECIALLY EQUIPPED GYMNASIUM IN THE ANN J. KELLOGG SCHOOL IN BATTLE CREEK

fifteen years ago, has been increasingly adopted in special schools and classes throughout the country. In the earlier public school classes, it was discovered that in many cases the child dismissed from the hospital fairly well on the road to complete recovery relapsed into a condition very little better than that before treatment owing to the ignorance, or the indifference and neglect of parents, and that orthopedic surgery without scientific supervision of after-care entailed great waste. The results accomplished in physical reconstruction through the regular employment of therapeutic measures, supervision of feeding and rest, and graduated and directed activities in connection with the specialized educational program, have led to the very general recognition of the responsibility of society to secure for every crippled child, the advantages of these preventive and curative measures as far as possible within the public school system of his own district.

The physical care of children in these classes is the responsibility of their physicians and surgeons. Physiotherapy has come to be regarded as an important phase of this care. Of 47 cities and counties reporting on this point to the Committee, 39 reported that physiotherapy is a part of the child's daily routine at school. In several instances lack of trained physiotherapists is given as the reason for its omission, in others, financial stringency. A considerable number of schools arrange for regular treatments in local hospitals. In smaller communities where the services of a trained physiotherapist are not available, treatments are often given by the regular teacher under the direction of the physicians in charge of the cases.

In the larger schools, physiotherapy includes: muscle training, both in and out of water; massage; corrective exercises and general gymnasium work; ultra-violet and infra-red treatments; surgical dressings; directed rest and recreation; coordination of classroom and shop activities with physical work; supervision of feeding and general health. The diagnosis of selected groups will reveal the breadth of this phase of the work.

Classification of the main causes of disability with the per cent distribution reported from 30 public and private day class teaching centers in which the enrolment ranged from 70 to 988; the total number of children examined having been 6,242 :

Infantile paralysis	35.8%
Bone tuberculosis	12.7%
Spastic paralysis	10.4%
Congenital	8.0%
Cardiac	13.1%
Accidents	4.6%
Other	18.0%

Cardiac children are included in the enrolment in special classes for orthopedic children in 18 of the 28 larger cities reporting on this point; the average number of cardiac cases approximating 15 per cent of the total enrolment in these schools. Care in the special class for crippled children is usually recommended for the "established cardiac child in whom the condition or infection is dormant." A large percentage of cardiac children enrolled in these special classes fall within Class II-A and Class II-B, American Cardiac Association classification. In Chicago, where cardiac children have had education in classes for crippled children for ten years, the plan has the endorsement of the Chicago Heart Association, which has provided medical care. The advantages secured through the assignment of cardiac children to classes for crippled children, pointed out by heart specialists after ten years' experience, are that with transportation many children are able to go to school who must otherwise be confined at home; with the milder forms of activity, warm lunches, no hurry, and no stairs to climb, children profit greatly by the school régime.

Experience in public school classes, as in other fields of care for crippled children, has shown that the expense of medical and surgical treatment, of long periods of hospitalization and nursing, the necessary crutches, braces, and other appliances, cannot be borne easily by parents of moderate

means, and is quite beyond those who are poor. This situation is met in public schools by the arrangement for parents to meet these expenses as far as possible, with private funds supplying the remainder. The New York law relating to special education includes provisions for meeting these expenses by public funds. The children's court judges are given the right to issue orders covering the physical care, treatment, and education of physically handicapped children from birth to twenty-one years of age in all cases of children for whom these services are not available because of the financial status of parents or guardian. The judge has the right to charge any portion of the cost of an order against the parents, thus the provision enables the judge to place whatever expense he finds the parent is able to pay, and yet assures the child a complete service which would otherwise be prohibitive. The provisions of the law cover the furnishing of all necessary appliances as well as payment for surgical care.

Supervision of Feeding

This is an important phase of the program of physical care undertaken in the majority of the larger schools and units. In practically all of these centers a warm midday meal is served to all children, and in many schools this is supplemented by milk, cocoa, or eggnog, with crackers on arrival in the morning, or during the day for all undernourished children. In a few localities field work in advising mothers in matters of diet is a part of the work of the school nurses or of the nurses of public health nursing organizations participating in the school program.

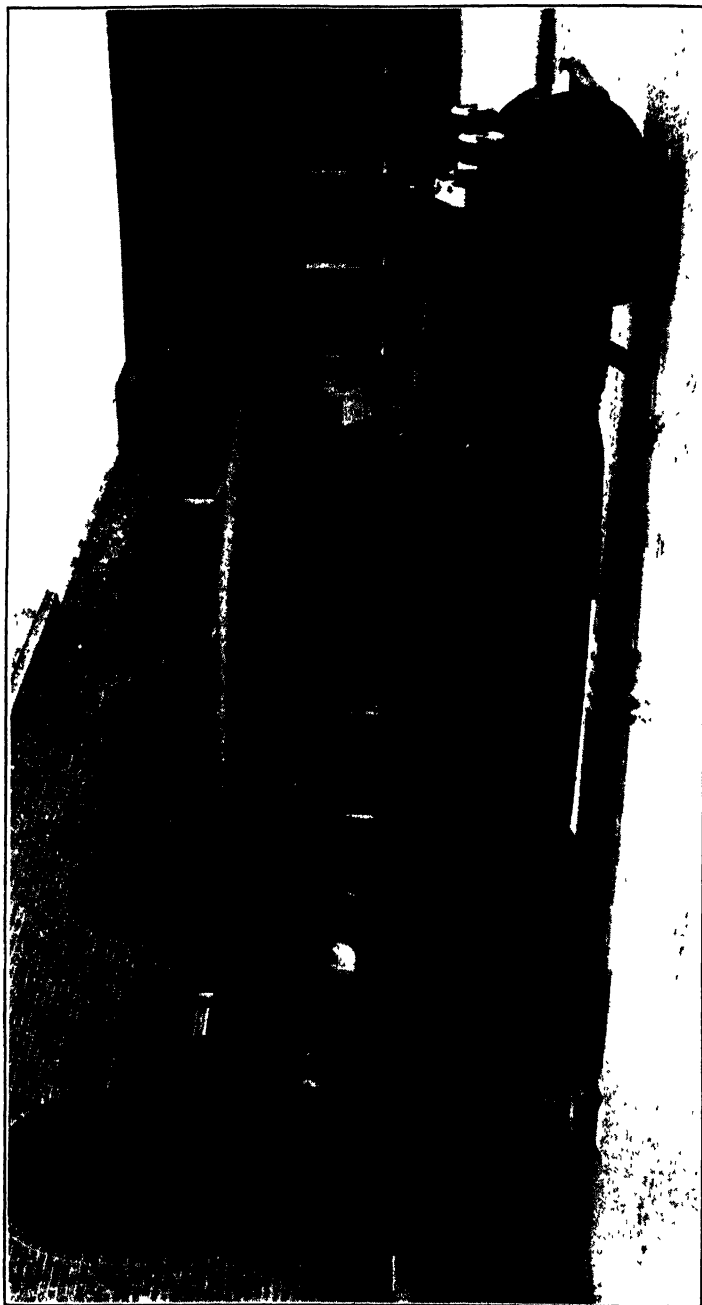
Reports from teaching centers for crippled children in 83 cities and towns, show that all children are receiving a warm meal at noon. In 53 cities, these lunches are furnished entirely at public expense; in 24 cities, the school furnishes the lunch but the parents pay for it if able to do so, or the school furnishes one hot dish and parents supplement this from home; while 6 cities report that lunches for all children are supplied from private funds. Costs vary a great deal. In

the schools of 44 cities, in which lunches are furnished at public expense, the costs for the year 1928-1929 varied from 9 to 35 cents a day for each pupil. Only one city reported a cost as high as 35 cents; 5 cities reported that lunches cost from 23 to 25 cents; 9, a cost of 18 to 20 cents; 13, a cost of 14 to 16 cents, and 14, a cost of from 9 to 11 cents. In some instances these costs included milk, chocolate, and so forth for supplementary feeding, but it was not possible to separate these items. In the schools which furnished only a part of the noonday lunch, usually one hot nourishing dish, the reported costs varied from 2 to 25 cents for each pupil; only one city reported a cost of 25 cents; 2 reported 20 cents; 10, 8 to 12 cents; and 3, 2 to 5 cents.

Transportation

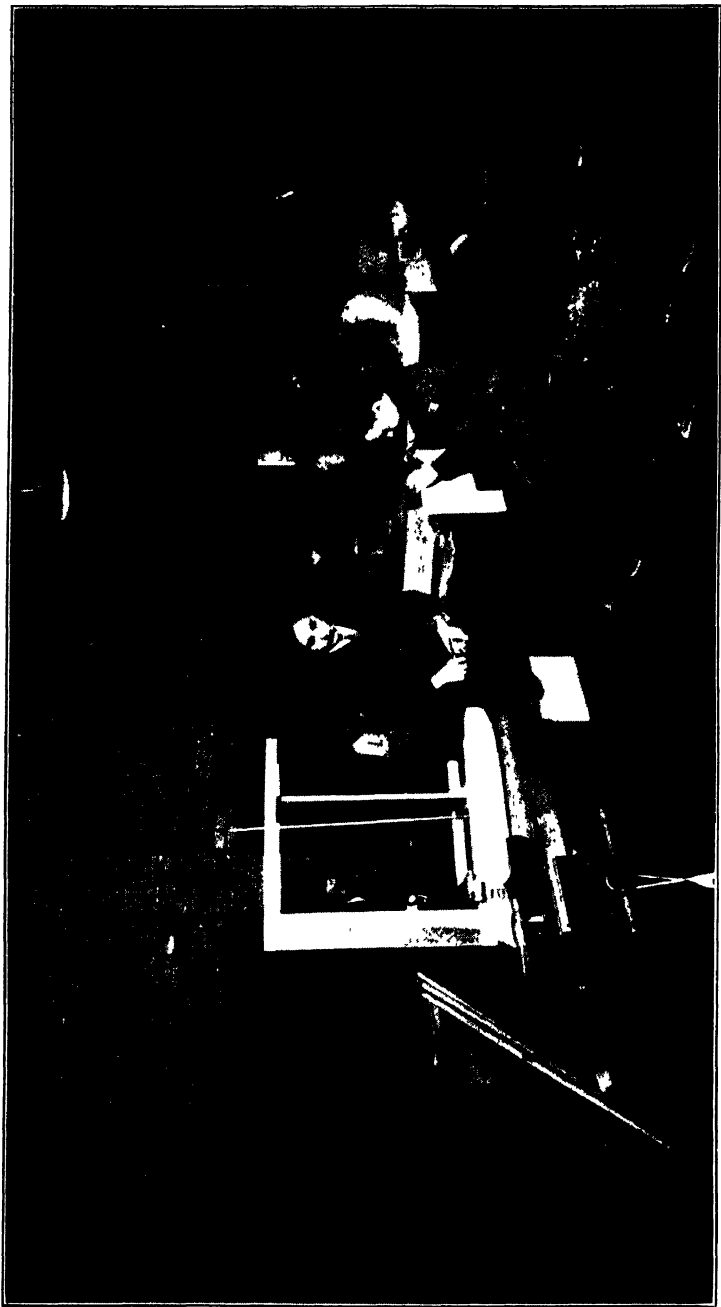
Transportation to and from school is recognized as a public school function in practically every community affording special educational facilities for crippled children and is another element of physical protection. In the more recent legislation, school boards are required to furnish transportation for children unable to walk to school, either to the special classes or to regular schools.

Safety, comfort, time en route, and economy are the main considerations in providing transportation. How these may be best secured will depend upon the requirements of each community. Various methods are now employed in different localities, sometimes several methods in the same locality. In cities where there are numbers of children, motor busses, built and equipped with devices for safety and comfort, are now generally used; each bus having a driver and attendant, carefully selected and trained. By careful planning of routes it is possible to reduce the time children must spend on the journey, but it is often necessary for a few children to ride for considerable distances. As has been said, experience has demonstrated that with proper facilities children are not injured by long rides, but there remains the grave question of possible injury to children who must ride for miles in ordinary school busses, automobiles or taxicabs. Individual



Courtesy of The Sunbeam School for Crippled Children, Cleveland, Ohio.

BUS FOR PUPILS OF THE SUNBEAM SCHOOL FOR CRIPPLED CHILDREN, CLEVELAND, OHIO. THE FLOOR OF THE BUILDING ENTRANCE IS FLUSH WITH THE FLOOR OF THE BUS



Courtesy of The Dowling School, Minneapolis, Minn

MANUAL TRAINING CLASS FOR BOYS IN THE DOWLING SCHOOL, MINNEAPOLIS, MINNESOTA

problems enter largely into the question of providing transportation for the smaller groups of children.

Of the cities of over 100,000 population 28 report that motor busses or coaches are used; 3, that children are carried in the regular school bus; 9, that regular automobiles or taxicabs are used; one, a truck. Busses are used in a few of the cities in each of the population groups below 100,000, though automobiles, operated under contract, and taxicabs, are much more commonly used. Reports from 11 cities say that busses are used; 12, automobiles under contract; and 20, taxicabs.

In schools which carry on a program of physical reconstruction in cooperation with local medical agencies, children are usually taken to hospitals and dispensaries or to offices of private physicians in the school busses; schools in 36 cities report this service. School busses are used for educational or recreational trips in 33 cities. It is obvious that, owing to the differences in the methods and in the extent and character of transportation services afforded in the different localities, comparative statements of costs are of little significance except as interpreted in terms of service. Annual costs for each pupil in 21 cities of over 100,000 population varied from \$26.54 to \$162.91 for the school year 1928-1929, the average cost being \$95.34. In 13 cities of from 30,000 to 60,000 population, costs varied from \$30.00 to \$106.00, the average being \$69.16. In 11 cities of from 10,000 to 30,000 population, costs varied from \$12.38 to \$120.00, the average being \$69.98.

In Michigan, the average per capita cost for transportation for crippled children for the school year 1928-1929 for 17 cities was \$102.83; this represented about 35.3 per cent of the total cost of the orthopedic classes.¹ In Ohio the statewide per capita cost of transportation based on total enrolment for the school year 1928-1929 was \$106.27; the highest daily cost for each pupil was \$.81 (in a city of 60,000 population); the lowest, \$.21 (in a city of 25,000).¹

¹ McIntyre, Hazel H. *Ohio Program of Special Education for Crippled Children*. Monograph prepared for White House Conference, March, 1930.

ACADEMIC EDUCATION

Detailed reports on organization for academic education were made in the questionnaires returned to the Committee from 94 teaching centers, that is, special schools, special school units, and special classes. These show that special education for crippled children in public school day classes is largely confined to the elementary grades. There were 390 elementary classes reported for the year 1928-1929 with a total enrolment of 7,571. Only 19 kindergarten classes were reported. These were in the schools of 13 cities, and enrolled 114 children. Only 2 cities reported the organization of pre-kindergarten or nursery school classes; one of these, in the Spalding School in Chicago, was for spastic cases only, and in 1928-1929 enrolled only 8 children. Fifteen cities reported the organization of junior or senior high school classes in special schools or units; the total enrolment was 461 in 28 classes. In a number of cities high school children are kept on the roll of the special school which in some instances furnishes transportation to regular high schools. Reports in some cases state that children are attending high schools, but that their work is separate from that of the regular classes because of lack of elevator service. In many instances the lack of opportunity for high school education is pointed out as a serious gap in the educational program; the badly crippled child finds great difficulty in keeping the pace in large high schools and leaves school for no other reason. Systematic follow-up of crippled children assigned to regular high schools at this critical adolescent period is needed to assure satisfactory adjustment. In a few instances these children are kept sight of through a system of central registration requiring them to report periodically.

Curriculum

The ideal of intensive physical care in special classes is to effect physical reconstruction as completely and rapidly as possible and enable the child to return to the ranks of normal children. The curriculum in special classes, therefore, usually follows that of the regular schools of the community as

closely as possible. Of 28 cities of over 100,000 population reporting on this point, 24 stated that the special classes adhered to the regular course of study in the local schools. Fifteen schools reported that children were able to maintain the standards of the regular grades; 5 that it was an individual matter, and that standards were maintained by much individual teaching. Washington, D. C., Camden, New Jersey, Buffalo, and Philadelphia reported modified programs. In the smaller cities the regular program is followed.

Adapting Education to Mental Range. Since the mental range of crippled children is as wide as that of normal children, provision must therefore be made for academic training from kindergarten through high school and on to college for the normal and brilliant children, and special facilities provided for the slow-dull groups and mentally deficient, and for blind and deaf crippled children.

Retardation, due to irregular attendance, is a serious problem. Following is a comparison of the age-grade distribution of the crippled children in grades one to eight in Chicago's four teaching centers, and the children in the regular schools for the year 1927-1928:

	Regular schools	Crippled children ^a	Cardiac children
Younger than normal age.....	16 3	4 8	2 4
Normal age.....	59.5	39 5	35 8
Older than normal age.....	24.2	56.6	51 2

^a Includes cardiacs.

Mental Rating Study. One of the studies made by the Committee has been a survey of the mental and educational status of crippled children enrolled in the special schools of Detroit, Michigan, Chicago, Illinois, St. Louis, Missouri, and Cleveland, Toledo, and Columbus, Ohio. The purpose of the survey has been to answer questions as to the ability of the crippled child in scholastic achievement, and as to the span of the mental ability of these children. Further, the field of vocational guidance is one of the outstanding phases of the school's work, and it is hoped that the results of the survey may be of benefit to those whose interest is especially centered on training the child to fit into a vocation suited to his mental ability and his physical power.

The scale used to determine the mental status of each child was the Terman-Binet Measurement of Intelligence. As an emergency measure the Kuhlman-Anderson Group Intelligence Test was given to the pupils who had received no previous rating. Of the number of cases studied, about 10 per cent were rated on the group scale and the rest on the individual scale. For the achievement test from the 1st to the 3rd grades, inclusive, the Hagerty Reading Test Sigma I was used to determine the grade level in reading. In the 2nd and 3rd grades the grade levels in arithmetic computation and in spelling dictation were measured on the Stanford Achievement Scales. A more complete battery was given in the remaining grades and in the high schools. These studies were confined to silent reading, spelling, dictation, reasoning and computation in arithmetic. The Stanford Achievement Battery was again resorted to.

The Intelligence Quotient was used to determine the mental range, rather than the mental age, due to the fact that I.Q. is the more commonly used term. For careful and concise individual study, the mental age should always be kept in mind relative to the growth of the child.

The groupings employed in Table 5 are based on the divisions made and used by Terman.

TABLE 5

Classification	Range of I. Q.	Normal children Whitney School, Chicago, Ill. ^a		Crippled children Schools of cities studied	
		Number	Per cent	Number	Per cent
Mental defective . . .	50-69	34	3.0	135	7.0
Borderline	70-79	86	7.6	319	16.0
Dull	80-90	232	20.7	330	17.1
Normal	90-110	495	44.2	661	35.1
Superior	110-120	138	12.3	427	22.6
Very superior	126-132	113	10.0	35	1.3
Near genius	132+	21	1.6	12	0.6
<i>Total</i>		1119	99.4	1919	99.7

^a Acknowledgment is made to Harry Tate, principal of the Whitney School, Chicago, for his kindness in allowing the results of his comprehensive study of the pupils in his school to be used as a means of comparing the work and the ability of the crippled child with that of the normal child. The Whitney School draws its membership largely from Bohemian homes in which the native language is still spoken.

This study reveals the need of educational opportunity and vocational guidance and training for crippled children on three main mental levels; the mentally deficient child capable of filling a routine job in industry; the slow-dull normal child, not book-minded, but often potentially the skilled mechanic; the normal or brilliant child.

Of the 3,000 pupils studied, over 75 per cent were over aged; 22 per cent were of average age, and about .017 were under aged chronologically. These figures held to a fairly consistent level throughout the entire 8 grades with a tendency to increase in the over-age percentage in the 5th and 6th grades, the greatest number of under-age pupils coming in the first grade.

Although it has been the policy in most cities to limit admission to special classes to children with an I.Q. of 70 or above, the results of the study in the 6 cities show an enrolment of 7 per cent below that minimum standard. In reporting on this query in the questionnaires, 8 cities stated that crippled children who were definitely mentally defective were taken, the total enrolment in the 16 classes reported being 288 children in 1928-1929. In ungraded schools it is found in some cases that the work of the class is seriously hampered by the enrolment of mentally defective children in the small group of normal children.

The problem of the mentally defective crippled child is one of the most difficult, and no doubt the least understood. In addition to the 7 per cent classified as mentally defective, the mental rating study shows a "borderline" group of 16 per cent, and a "dull" group of 17.1 per cent. Two cities report the organization of special classes for experimental work with children in these groups. Cities in which special opportunity classes have not been organized report that emphasis is placed upon industrial or household training for children of these types. In the Spalding School, where classes for children of these mental levels have been conducted for eight years with carefully adjusted programs, and with defi-

nite vocational objectives in each individual case, 80 per cent of the pupils have been successfully placed in industry.¹

Cost of Education in Several States

There have been very few studies of the per capita cost of educating crippled children in special schools or classes. It is impossible to present comparative statements of costs for different communities, that are not misleading owing to the differences in the number of pupils enrolled, the nature and extent of the special services afforded, the extent of participation of outside agencies in expenditures entailed in special phases of care, and other governing factors. In some instances the per capita costs reported from the one-room ungraded class or school in which neither special service, except transportation, or special instruction, are afforded, exceeds the costs reported from schools or school units which provide services and facilities for all kinds of orthopedic after-care, and for vocational training.

Michigan. The provision of the State law of Michigan requiring that special classes shall be maintained only in properly equipped rooms, and the administrative policies of the Department of Education governing special school equipment, expenditures for teachers' salaries, and for special services, tend to standardize these items for the different cities of the state. In the study of per capita costs made by the Division of Special Education for the year 1928-1929, the average per capita cost for each kind of service for which state reimbursement was allowed, and the percentage of the total cost of each kind of service in the special school of the 17 cities studied was as follows:

	Teachers' salaries	Transportation	Special service	Lunches	Special equipment
Average cost.	\$122.83	\$102.83	\$37 21	\$20 96	\$7 20
Per cent total cost..	42.2	35.3	12 8	7 2	2 4

The average total per capita cost in the special classes of these cities was \$291.03; the average per capita cost for

¹Smith, Margaret, *Vocational Training and Counseling in Chicago Schools for Crippled Children*. Monograph prepared for the White House Conference, 1930.



Courtesy of The Oakman School For Crippled Children, Detroit, Mich

FIRST GRADE CLASSROOM IN THE OAKMAN SCHOOL FOR CRIPPLED CHILDREN, DETROIT, MICHIGAN



Courtesy of The Dowling School, Minneapolis, Minn

SECOND GRADE ORTHOPEDIC CLASS IN THE DOWLING SCHOOL, DEPARTMENT OF SPECIAL EDUCATION, MINNEAPOLIS, MINNESOTA

each normal child for the same period was \$64.17; the difference in per capita cost being \$226.86.¹

Ohio. For the State of Ohio, the average excess cost paid for day schools alone in 1928-1929 was \$209.89, while the average normal per capita cost was \$68 (elementary costs only, except in some 5 instances where junior high school costs were included). The total average per capita cost for crippled children in day schools, determined by adding the normal per capita cost to the excess cost paid by the state, would be approximately \$277.89.²

Costs in Seventeen Cities. Dr. Heck found that in the 17 cities for which he studied the per capita costs for crippled children as compared with similar costs for regular day schools based on average daily attendance, the per capita cost in one city was 6.45 times the cost for the regular day elementary school. In another, it was 2.92 times the regular school cost. The reports for all other cities varied between these two extremes, the median being 3.8.³

Academic Teachers—Qualifications and Training

It is manifest from these findings that teachers of crippled children must have exceptional qualifications and training. In addition to superior ability in teaching normal children, the requisites in personality are adaptability, willingness and endurance, controlled sympathy, and vision. The teacher of crippled children must be able to keep up to grade the children who are constantly becoming retarded by absences of hours, days, or weeks. She must carry on her class program in the larger schools in cooperation with the doctors, nurses, and physiotherapists of the treatment center, and coordinate her work with that of shops, or with other special services. She is surrounded by children enduring dis-

¹ *Michigan's Program of Special Education for Its Physically Handicapped Children.* Prepared by John J. Lee, State Director, Division of Special Education, Department of Public Instruction, February, 1930. pp. 7-9.

² McIntyre, Hazel H. *op. cit.*

³ Heck, Arch O. *op. cit.*, p. 29.

comfort, often actual physical or mental suffering; there are noises of crutches and braces, of wheelchairs; the shock of children falling, and the necessity for helping, at all times, in meeting emergencies that are foreign to regular classroom teaching. Since the welfare of the crippled child is dependent in so great a degree upon the attitude and circumstances of the family, the teacher must be able to enter into their planning for his educational and vocational program. Vision is especially needed, when the time comes, to help tide the adolescent child through the spiritual crisis of realization of all the implications of his physical impairment, in their relation to his social and his vocational ambitions. These qualities, needed in any school for crippled children, cannot be too greatly emphasized for the teacher in the single room class or rural school.

Skill in teaching in this special field depends largely upon a sound background of knowledge of child psychology, with an added insight into the emotional and mental significance of physical defect; upon a scientific understanding of the diagnosis, treatment, and prognosis of the diseases which are the chief causes of crippling; and upon training in the general principles of social case work, and vocational guidance.

Reports on the requirements for teachers in special classes were made in the questionnaires returned from 78 cities and towns. Special training is required in only 27 of the cities reporting; 6 cities reported that standard requirements are being established. In 13 of the remaining cities, which reported that there were no requirements for special training, teachers are chosen from the school system because of successful experience in teaching normal children, or adaptability for this work. Experience in teaching ungraded classes is specified in several instances.

In Michigan, the state standard requirements fixed by the Department of Public Instruction are adhered to in the schools reporting. These specify a life certificate, at least one year of successful teaching experience, and one year of special training, majoring in the work chosen.

In New York City, the following regulations governing the training of teachers of physically handicapped children are compulsory:

License No. 1, or its equivalent;

Three years of successful teaching under such license;

120 hours of post-graduate study at an approved college concerning the special group of handicapped children the teacher selects, of which

Sixty hours are in methods of physical care and instruction of the selected group,

Thirty hours in specialized physical activities and health education, and

Thirty hours in observation at clinics. These study courses are required before a teacher is admitted to a written examination conducted by the Board, and an oral examination for successful candidates.

In Chicago, teachers rated as "superior" are chosen from the school system because of special qualifications and skill in teaching normal children, are required to spend four months probationary period in the special schools, and must fulfil the special requirements of fifty hours clinic service, and one major of related university work.

In Buffalo, the teacher must be specially adapted, have 150 hours of special training in university work, and grade school experience.

Salaries. The salary range for teachers in special schools and classes for crippled children is higher in many places than that of teachers in the corresponding grades in the regular schools of the system. Additional compensation is allowed in some instances because of the exacting nature of the work, without reference to experience or training. In others it is granted upon the basis of superior ability and experience in the regular grades from which teachers are carefully selected; while in school systems where crippled children's classes have been established for some years, the salary differential is dependent upon compliance with definite require-

ments covering skill, experience, and technical training in this special field. Sixty-five cities have reported on this point. In 26, no extra compensation is paid; in 35 cities, the amounts range from \$50 to \$500 a year above those of the teachers in corresponding grades in the regular schools of the system. Seventeen cities report an additional sum of \$100 a year; 3, \$150; one, \$175; 5, \$200; and 3, \$300. Two cities report that a maximum of \$500 is allowed.

Dr. Heck found in his study of salaries for academic teachers of crippled children, that in 18 cities reporting on maximum and minimum salaries, the highest maximum was \$3,400; the highest minimum, \$3,300. The mid-score for the minimum salaries was \$1,400; for maximum salaries was \$2,050.¹

VOCATIONAL TRAINING OF CRIPPLED CHILDREN

The greatest weakness in the present program for crippled children is in the vocational field. Only the large unit schools are equipped to give vocational training, and that in a very limited field. Provision for prevocational training is general in the larger schools and school units. The weakness of the present program lies in the limited knowledge of vocational education on the part of classroom teachers, the lack of trained vocational counselors, and the general misconception of what constitutes vocational training. Basketry, toy-making, weaving, fancy work, and so forth, are not vocational courses; they belong in the field of occupational therapy. Woodwork, printing, dressmaking, electricity, sewing, and millinery, as taught in the schools, are usually prevocational in character.

Special rooms and equipment for prevocational work are reported from the schools of 39 cities. The number of industrial and vocational teachers employed in these schools was approximately 60, though it was impossible in some cases to tell whether the work of the occupational therapist and

¹ Heck, Arch O. *op. cit.*, p. 29.



Courtesy of Detroit Public Schools

PROSPECTIVE PRINTERS LEARNING THEIR TRADE IN THE OAKMAN SCHOOL FOR CRIPPLED CHILDREN, DETROIT, MICHIGAN



Courtesy of Detroit Public Schools

GIRLS AND BOYS OF THE OAKMAN SCHOOL FOR CRIPPLED CHILDREN, DETROIT, LEARN JEWELRY MAKING

industrial teacher were not confused. Nine commercial teachers were employed in schools giving junior and senior high school work. In a number of places vocational training is arranged for in the technical departments of local high schools, or in trade, technical, or art schools.

Since the ultimate aim of the special care and education provided for crippled children is productive citizenship, the critical period of transition from school to industry must be anticipated and provided for through guidance during the years of physical rehabilitation and academic training. Vocational counseling should begin early and be carried on through the cooperation of parents, teachers, physicians, and competent vocational advisers.

Only one state has made legislative provision for the employment of a teacher responsible for work in this field. The California law [1618 P.C. (1921) as amended by ch. 595, 1927 Laws] provides that governing boards of school districts may employ, with the approval of the state department, a special "teacher coordinator" to study the employment possibilities for physically handicapped persons, and to coordinate the instruction of pupils in the special classes for the physically handicapped with the commercial and industrial pursuits of the community. Los Angeles was the first city to avail itself of this provision, and while the work has been under way for only a short time it is felt that "the work of the teacher coordinator is tremendously worth while, and that some really constructive things have been done by this new department."

Work of the character of that contemplated by the California law, has been undertaken by local boards in a few cities. In Chicago, the Vocational Adviser for the Handicapped in the Vocational Guidance Department of the Board of Education gives full time to the work with physically handicapped children from the regular and special schools of the city. The scope of the work in counseling by this department has been greatly enlarged through the joint cooperation of the Chicago Rotary Club and the School of

Social Service Administration of the University of Chicago in a community program of guidance within the industries, which has made available the services of graduate student helpers in the schools and in the industries. A recent study of the results of five years work by the adviser of the handicapped throws much light on many of the difficult phases of this work, and indicates the need of more adequate provision for guidance and placement in both regular and special schools.

In Minneapolis, Jersey City, and Cicero, Ill., teachers employed to give part time to work of counseling and placement are reported. In other places the work of guidance within the schools is undertaken voluntarily by principals and teachers.

The unification of the industrial training in classes for crippled children with the rehabilitation program of the community and state offers the most hopeful solution of this problem. Local programs in several instances point out the methods by which local school boards may begin the work and carry it up to the point where the federal and state services may enter without loss of time or overlapping of work. The programs in Michigan, New York, New Jersey, and Ohio offer valuable suggestions in this field.

EMPLOYMENT

The chief obstacles to employment of crippled persons which have been discovered in the work of adult rehabilitation indicate in a general way the problems which concern the vocational departments of the public schools. They are:

In industry

The objections of employers based upon questions of efficiency, necessity for special provisions or equipment, danger of accident, fire hazards, attitude of the foreman, added responsibility under workmen's compensation laws, cost of group insurance

Lack of employment service due to the reluctance of private employment agencies to handle the handicapped worker, lack of public employment agencies, and of trained workers in existing public employment agencies.

In professions (for the gifted cripple)

Difficulty of securing training because of questions of transportation, maintenance, tuition, inaccessibility of classrooms in high schools, colleges, and professional schools; reluctance on the part of educational authorities to accept the responsibility.

The general problem of unemployment.

Methods of meeting these obstacles which are being undertaken increasingly in different communities are:

Through training crippled children for employment

In public school special classes

By the extension of facilities for prevocational training as a means of discovering tastes and capabilities; by providing for special service in vocational departments of local school systems, or in the schools for early vocational guidance for all children whose handicaps are of a nature to make employment problematical; by providing for vocational training in the special schools wherever feasible; and by extending vocational opportunities through cooperation with technical schools, and placement training in industries

Through providing for tuition and maintenance so that training may be secured in private trade and technical schools

Through securing the services of the state vocational rehabilitation service for young persons coming under its provisions.

Scientific placement and employment supervision.

Development of sheltered workshops for crippled persons unsuited to general industrial employment.

Discovery of opportunities for the independent worker.

Education of the public, aiming to change the traditional attitude toward the crippled.

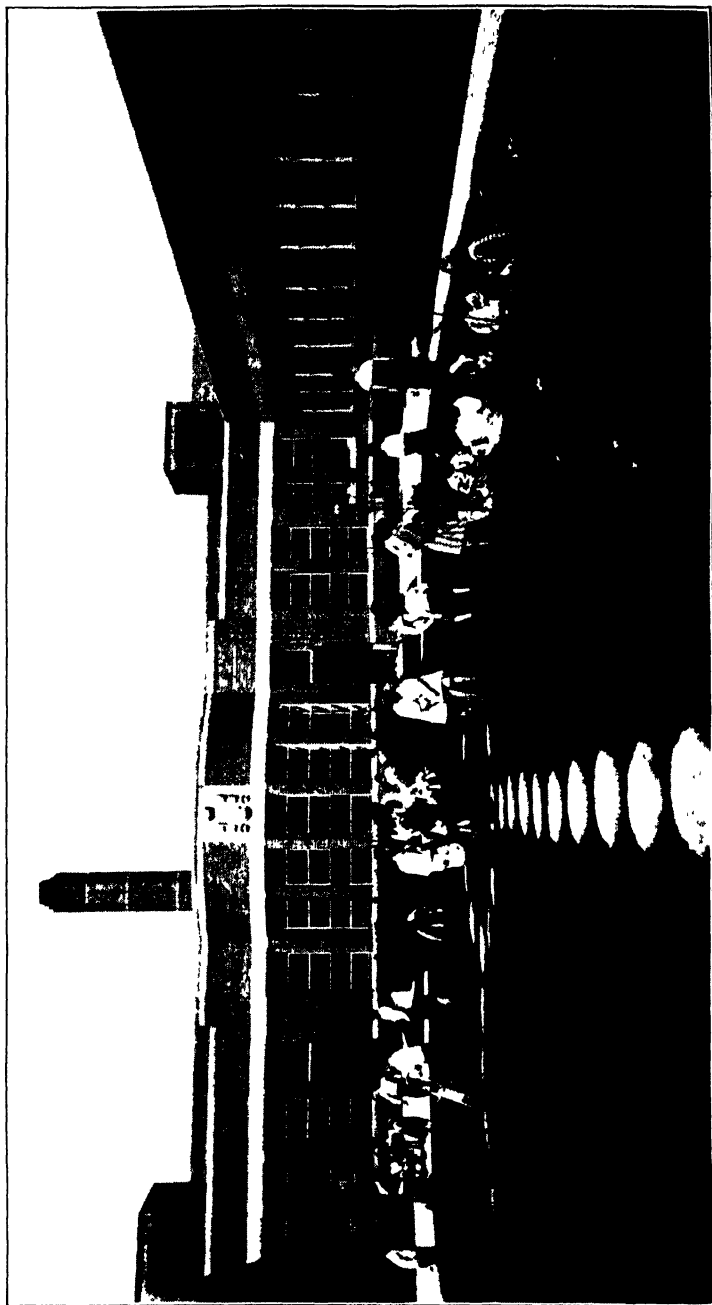
Establishment of special employment agencies.

Training workers in this special field of vocational guidance.

RECREATION—AN IMPORTANT FACTOR

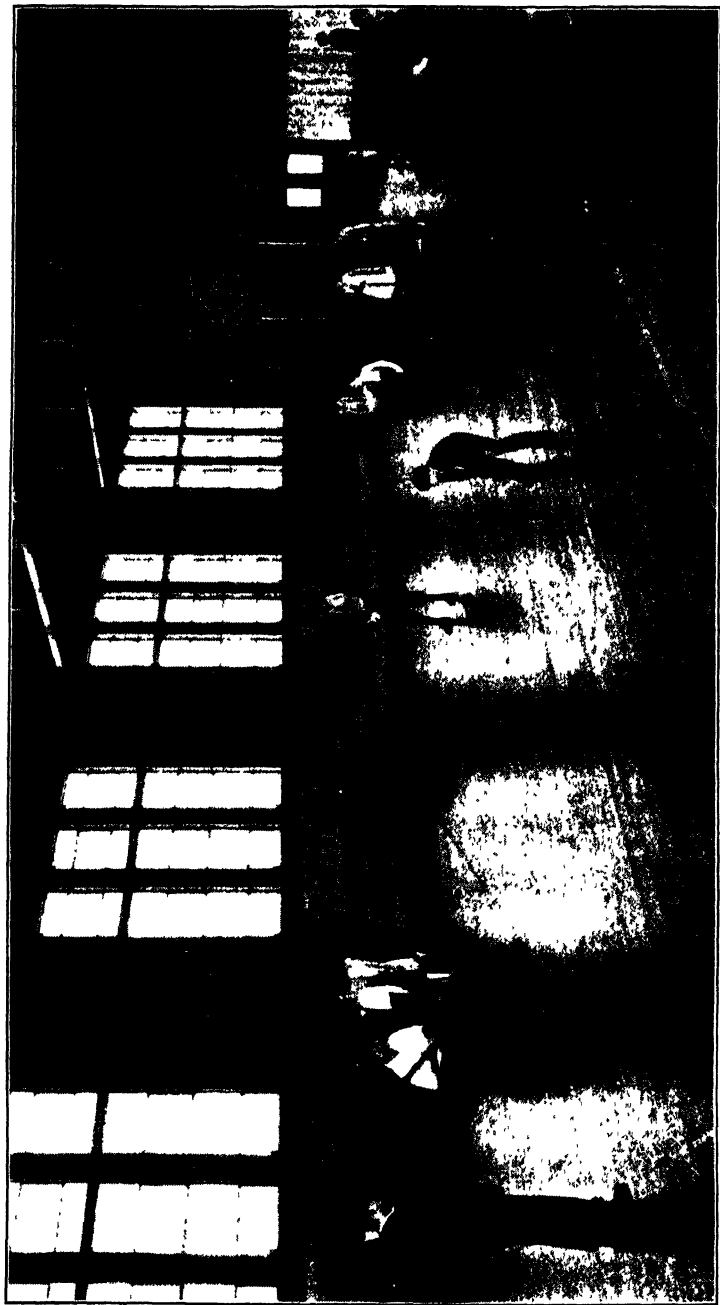
There is evidence of growing recognition of the unusual recreational needs of crippled children and of the important part it plays in the entire educational program. The provision of entertainments, excursions, picnics, and so forth, by the schools or outside groups is very generally made a feature of the special school or class program. Of 35 cities reporting on recreational facilities, 26 stated that summer camps were provided by Rotary or other service groups. In 3 instances the local school board employed teachers and attendants for a summer school conducted at camp.

But the provisions fall far short of meeting the everyday needs of these children. The importance of free play in the many sided development of children cannot be overestimated. Deprived of the stimulus of competition with the possibility of success in the games of the normal children about him, the crippled child is liable to grow up with a lack of initiative and self-confidence which may affect him in all the associations of life. The intense sensitiveness of young children is fostered and there is danger of the development of neurotic tendencies toward day dreaming to compensate for a sense of inadequacy in real situations. The unfortunate traits of character traditionally associated with crippled persons may without doubt be traced largely to experiences of childhood. To combat these tendencies it is essential that crippled children be given ample opportunity for free play in which success in overcoming obstacles or in competition with others is to a certain extent assured, and all efforts are treated with respect and consideration. The school for crip-



Courtesy of Detroit Public Schools

SAFE, DIRECTED PLAY IN THE COURT FOR THE PRIMARY CHILDREN OF THE OAKMAN SCHOOL FOR CRIPPLED CHILDREN, DETROIT



Courtesy of Ann J Kellogg School, Battle Creek, Mich.

CRIPPLED CHILDREN AT PLAY IN THE GYMNASIUM OF THE ANN J. KELLOGG SCHOOL, BATTLE CREEK

pled children has a far more important rôle in providing for free play than the regular school because it is only during its sessions that the child is thrown with companions with whom he can compete upon somewhat equal terms. For this reason, greater consideration must be given to space and facilities for play in designing and equipping special schools or in arranging for the accommodation of special units or classes in regular buildings, and to the time allowed for play in the daily schedule.

Play teachers in the larger schools, and the regular teachers in the smaller units or one-room schools, should have some knowledge of the social, educational, and moral values of play, and of the games suited to the mental and physical developmental level of each age period, to help them in guiding children to opportunities for pleasure and progress.

The responsibility of the school toward the child so seriously crippled that his physical activities must always be limited, is very great. It must help to counteract the effects of the indulgence of parents and the special consideration or the slights of playmates which form a poor foundation for the development of good character traits, or of normal resistance to outside influences or neurotic tendencies.

Recreation during the period of adolescence is of particular importance, as at that time the crippled child comes to feel more acutely his separation from the social activities of boys and girls of his own age. It is found that children leaving the special classes at this period frequently drop out of school for no special reason, beyond "failure to adjust in the regular class." Careful follow-up study is needed at this point to discover how far this fact may be attributed to failure of social adjustment among normal young people rather than classroom adjustment. While educators are advocating that the crippled child should return to the regular schools on reaching high school there is a question as to whether this may not be the most critical period in the child's whole life for such an adjustment. Certainly, the question

should be given serious consideration from actual facts and not determined upon the basis of theory.

The development of group activities for older children in the upper grades and in high schools is reported from comparatively few teaching centers. Only 2 cities report the organization of Boy and Girl Scout groups in the school; 6 report that a social center in the school is provided for the activities of children in the upper grades, and for high school and alumni groups.

COOPERATION WITH OUTSIDE AGENCIES

No special school or class that attempts to carry a complete program for the rehabilitation of crippled children is self-sufficient. Reports from the schools and classes of 61 cities in the different population groups studied, show that outside agencies are participating in the programs of these schools to an extent unprecedented in the history of public education in this country. In many instances the organization of a special class has been due to the activities of outside groups which, in the beginning, have provided the rooms or building, and the funds for special equipment and services. In Des Moines, Iowa, an extensive program of special education for physically handicapped children has been made possible through the gift by private citizens, of a specially designed and equipped public school building.

Although the forms and methods of cooperation differ considerably, it is found that in practically every community the medical, nursing, and social agencies are sharing in the work, the responsibility, and the expense of orthopedic after-care; while civic and service organizations, children's foundations, lay groups, and individuals are providing funds for special equipment, lunches, the purchase of appliances, recreational facilities, and opportunities for higher education and vocational training. To an increasing extent, service organizations and industrial groups are undertaking some of the more difficult problems of employment.

The extent of cooperation of medical and nursing agen-

cies depends upon the school policy with reference to assuming responsibility for the supervision of physical care. In schools to which children are admitted only upon the recommendation of the orthopedist employed by the board of education, or examination in the school clinic, cooperation with outside medical agencies is maintained to some extent through the now general practice of carrying on the therapeutic treatments in the school, under the direction of the child's own physician. Much more active cooperation with outside medical agencies is carried on in schools which admit children upon the recommendation of orthopedists of recognized standing in hospitals, dispensaries, and in private practice. Public health nursing agencies play an important rôle in the school program in many places, through their services both within and outside the schools. In several cities nurses detailed from the visiting nurse association give services in the special schools, and carry on field work between the school, the clinics and the homes of the children.

In the field of social care the manifold needs of crippled children call for the services of every type of social agency. Often children must be protected from neglect and cruelty, in some instances from exploitation of their crippled condition, by their own families. One of the most important functions of the special school is that of securing the intelligent cooperation of the child's family in the social and vocational as well as in the orthopedic plans for the child. In the majority of the schools reporting, the only regular provision made by the school for follow-up is through the home visits of the nurses; social needs are left to their initiative, or to that of principals and regular classroom teachers. In a few of the larger schools trained home visitors, or "visiting teachers" are now found on the staff. In the care of crippled children the term "visiting teacher" is often used to designate the teacher who goes into the homes to give instruction to children who are too seriously crippled to attend classes. This has given rise to some confusion in the reports on the number of trained home visitors. There are many phases of the problem of the crippled child in the family, besides

those of physical care and school attendance, which require the skill and insight of a home visitor or visiting teacher with a sound background of social case work training and enough experience in the special school to qualify her to recognize and deal with the deeper social and spiritual problems of the crippled. In schools where the employment of a qualified social worker is not feasible, success in meeting these problems must depend upon the ability of the principal or teacher to recognize the need and secure the cooperation of the social agency in the community best qualified to meet it.

The paramount need shown by the reports on the co-operation of community agencies in the special school programs, is for the better coordination of services to prevent the overlapping of work or the waste of funds and energy in activities which may even be detrimental to the welfare of the children. The organization of an orthopedic council would provide for a continuous and unified service which is essential for completing the rehabilitation program for crippled children, of which the special school or class is only a part. This council should include school officials, representatives of medical, nursing, and social agencies, and of civic and service groups in each community, affiliated with the state departments of health and welfare, and the divisions of rehabilitation through their local units.

The work accomplished in Broome County, New York, is a splendid illustration of the possibility of developing a unified program through the coordination of the services of many organizations in a community which embraces a rural section. Several years ago, numerous societies engaged in work for crippled children, including Masonic bodies, Knights of Columbus, Elks, Rotary Clubs, and women's clubs, incorporated under the name of the Broome County Crippled Children's Association, Inc., taking over the work of the individual societies. In Binghamton, the Department of Education maintained a special school for crippled children, a trained orthopedic nurse on the school nursing staff, and a full-time teacher in the city hospital. The Community Service furnished rooms for clinics and nurses for rural

cases, while the State Department of Health held occasional clinics. With the passage of the law for state and county relief for the physically handicapped, the County Board of Supervisors appropriated funds for the salary of a county nurse, the Binghamton Rotary Club furnished her car and its upkeep, and guaranteed the salary of an orthopedic surgeon employed by the Broome County Crippled Children's Association. A summer camp was given and equipped by a private citizen. Further consolidation of these services for the year 1930 was made so that the county employed the orthopedic nurse and paid the salary of the surgeon which the Rotary Club had previously guaranteed. The Binghamton Rotary Club still furnished the car and upkeep for the nurse, and took over the support of the summer camp.¹

SUMMARY

The problem of crippled children has been considered both from the economic and the humanitarian points of view. It is difficult to say where the one begins and the other ends. Because of the nature of society, the end result of the movement in their behalf must be economic; but those who have dealt with crippled children growing into manhood and womanhood know the inexpressible depths of joy with which, trained and capable, they accept their opportunities for service in society.

Michael Dowling said: "I believe that the saddest sight in the world is that of a crippled child sitting at the window each morning watching his brothers and sisters go forth to school."

Doctor Charles Stivers of Los Angeles, says: "What if we do right by 10,000 and bring forth only one Steinmetz?"

¹ Allaben, C. M. "Crippled Children Relief in Broome County," *New York State Education*, January, 1930, pp. 408-409.

RECOMMENDATIONS

The conclusion of the Committee is that the responsibility for the care and training of crippled children as outlined in this report should be placed upon the public school systems of every state, city and county of this country by mandatory law. The United States can do no less for its crippled children than England has done for hers in the Education Act of 1918. Its recommendations are based upon this conclusion and upon the following *definition* in order to differentiate between children who need special educational facilities and those who do not:

A crippled child eligible to attend a special school or class for crippled children is one who, by reason of disease, accident, or congenital deformity, cannot attend the regular school with safety and profit during the period of his physical rehabilitation, simultaneous mental training and social adjustment.

- A child for whom physicians and surgeons have recommended the daily care of nurses and physiotherapists
- A child who must have transportation service to reach school, specially adjusted furniture, or other facilities
- A child who needs special attention in vocational guidance, training, and placement
- A child handicapped by cardiac complications or other medical conditions for whom no other provision has been made
- A child who requires plastic surgery which must be followed by muscle training or speech training.

ORGANIZATION

The following organizations should be instituted:

1. A National Bureau of Research and Publicity
 - To study the best methods of giving the crippled child, according to his endowments, equal opportunity with the normal child
 - To study the end results of special education through individual case studies embracing large numbers of children over a period of years

To study the cost of education for crippled children under different methods, in the light of services rendered and end results

To establish terminology.

To study the problem of rural children, with especial reference to those of mountainous regions and of the great plains

To plan for the extension of the services of the state and federal vocational rehabilitation bureaus to meet those of special schools and classes

To carry on a continuous program of publicity and propaganda based upon the constitutional rights of crippled children, not upon sentiment.

2. An administrative unit, wherever feasible, in the state department of education, to which shall be delegated all powers and duties in connection with the care and education of physically handicapped children

To provide for the systematic enumeration of crippled children from birth to twenty-one years of age through a school census, to be taken annually by enumerators qualified to recognize the various types of crippling diseases and conditions

To maintain a central register of crippled children through a well coordinated system of reporting from all agencies, organizations, and individuals concerned in the care of crippled children

State registers—Records of the state board of health: (a) reportable diseases; (b) state board clinics; (c) birth registers; (d) reports from the division of maternity, infancy, and child hygiene

Records of the state board of public welfare: (a) State-wide and local surveys; (b) dependent crippled children; (c) clinics; (d) institutions

Local registers—boards of health: (a) reportable diseases; (b) local clinics

Public, private, and parochial schools—superintendents' reports from records of school

SPECIAL EDUCATION

physicians, nurses, attendance office, school census records

Institutional records

To assume responsibility for coordinating the services of the state departments of health and welfare with that of education in a complete program for prevention, treatment, education

To work in close cooperation with the division of rehabilitation in developing a coordinated program for vocational guidance, training, and placement

To report children to local school boards

To promote and supervise special education in local school systems, serving in an advisory capacity on questions relating to

Buildings and equipment

Organization

Special services

Provision for special types: (1) deaf, blind, feeble-minded crippled children and those afflicted with cerebral palsy; (2) Institutional cases; (3) Instruction of home-bound children

Inter-district cooperation

Boarding home care

Maintenance for higher education or vocational training

Standards and costs

Research—with advisory council of local organizations

To assume responsibility for proper legislation relating to provisions for handicapped children, including:

Excess cost reimbursements to local school systems

Compulsory attendance laws for physically handicapped children

Maintenance funds for higher education

To secure cooperation of medical and lay groups in the larger problems of prevention

To evaluate annually the work of the state and local communities

To develop effective methods of publicity in order that the public may have a thorough understanding of the value of special education for physically handicapped children

To encourage the establishment of training courses in higher educational institutions to meet the need for more and better trained classroom teachers, physiotherapists, visiting teachers, and vocational advisers.

3. Special classes or schools

The public school systems of local communities, city, town, or county, should be responsible for the proper care and training of every individual crippled child

Although dictated by local conditions, organization, facilities, and methods should be based upon the findings of the federal and state bureaus.

APPENDIX

DESCRIPTION OF SOME PUBLIC INSTITUTIONS WORKING FOR CRIPPLED CHILDREN

The New York State Reconstruction Home

In 1929, The New York State Hospital for Crippled Children was changed from an operating orthopedic hospital to a convalescent reconstruction home, the medical work being taken over by the orthopedic staff of Cornell University. The institution is to be remodeled to care for 300 patients and to provide proper buildings and equipment for complete rehabilitation service to handicapped children. The Home is under the administration of the State Department of Welfare. Cases are paid for in the first instance by the State; if parents or guardians are able to pay, the institution is required to collect from them; one half the balance is charged to the county in which the child has residence. 1929 Laws (Art. IX, Sec. 130, ch. 517.)

On February 15, 1930, the total enrolment for instruction was 137; of these, 10 were of kindergarten; 109 of elementary school, and 18 of high school age. Six teachers were giving their time to kindergarten and elementary instruction and 4 to high school, the number of pupils per teacher per day averaging about 24. On leaving the hospital all children are followed up through the services of the nurses of the State Department of Health, and local agencies cooperating in the State Crippled Children's Service.

The Massachusetts State Hospital School

Established in 1904, and designated a state orthopedic hospital, convalescent home, and special school, this institution is under the supervision of the State Department of Public Welfare. Indigent children are admitted by the board of trustees directly upon application of parent or guardian. In some cases "pay" patients are admitted. The state must furnish board and tuition when not otherwise provided, but when children having legal settlement in a town are in the state hospital, the town corporation wherein the child resides is required to pay board not to exceed \$6.00 per week. (Mass. Gen. Laws 1921, Vol. I, pp. 1202-1204. Am'd 1928, chap. 155, Sec. 39.)

The appropriation for the expenses for care and education of crippled children for the year ending November 30, 1929, was \$192,033.75.

The school is in session five and one-half hours a day for ten months, and all children able to be taught are taken to classrooms. On February 15, 1930, there were 237 children enrolled, 12 in kindergarten classes, 216 in 12 elementary classes, and 9 in a pre-vocational class. Seven full-time academic teachers were employed. A modified program in academic subjects follows the public school programs in the main. Teachers are chosen for skill and training in subjects taught and for ability to adapt to children of various types of disability. In addition to the academic work, music, domestic science, cobbling, sewing and other industrial and vocational preparatory subjects are taught. Recreation is especially emphasized, the assembly hall being used as a social center, and music and dramatic work are featured. On leaving the hospital children are given follow-up services through arrangements made by the social service worker with local agencies throughout the state.

Minnesota—Gillette State Hospital for Crippled Children

Under the present law, this hospital is under the management of the State Board of Control. Children of poor parents are eligible upon application of the family physician approved by the Board. (Minn. General Statutes 1913, Secs. 4135-4138, as am'd Stat. 1927, Sec. 4547.)

For the fiscal year ending June 30, 1930, the legislature appropriated \$182,150 for the cost of physical care and education of patients. The educational department, which is fully accredited, includes classes from kindergarten through high school. The state curriculum is followed and children take the State Board examinations for grade and high school credit. Daily sessions are from 9 to 12 and from 2 to 4 on regular school days for a nine months' term.

On February 15, 1930, there were 165 children enrolled as follows: 14 in one kindergarten class, 119 in 7 elementary classes, and 32 in 3 high school classes. Seven academic teachers and one occupational therapist were employed. Academic teachers must be graduates of normal school, college, or university, and have experience in teaching normal children. When children are discharged from the hospital, the home nursing service and the local school board are notified; follow-up is also provided for through the out-patient department of the hospital.

SPECIAL EDUCATION

Nebraska State Orthopedic Hospital

Provision is made for classes in academic subjects from kindergarten through high school. (Neb. Comp. Stat., 1922, p. 2160, Secs. 6891-6895.) The legislature of 1929 appropriated \$160,000 for care and education of patients for the biennial 1929-1931.

The school is in session for four hours each regular school day for the whole year. On February 15, 1930, there was one class each for pre-kindergarten, kindergarten, and high school children, and two classes for those in elementary grades. Provisions for follow-up care and return to the regular school are made through the cooperation of local welfare workers.

North Carolina Orthopedic Hospital

The educational work in this hospital has been carried on since 1922 by the County of Gastonia in which the hospital is located. The school is in session for four and one-half hours each regular school day for eleven months in the year. On February 15, 1930, there were 31 children enrolled in the elementary grades under two teachers. One ungraded class is assembled in the schoolroom in the forenoon; in the afternoon both teachers give individual bedside instruction. The regular school curriculum is followed. One occupational therapist is employed. Because of pressure for beds and lack of facilities for care and education in local communities, the need for better provision for convalescent care in the hospital is keenly felt. In many cases children from remote districts have had no opportunities for education, and after their return home none will be open to those too seriously crippled to attend the country schools in the mountainous regions. Follow-up is possible to some extent through the regional clinics.

The appropriation for the Orthopedic Hospital in 1929 was \$121,500.

Connecticut—Newington Home for Crippled Children

This is a state-wide school and home under private management. The legislature of 1927 appropriated \$630,000 for the specific purpose of erecting residential buildings and for state aid for each resident child. Children are admitted upon approval of the Governor, and the state is authorized to pay \$8.00 per week for each child

admitted to the home by the probate courts of the state. (1921 Laws, ch. 355; 1923 Laws, ch. 69.)

The school is in session for five and one-half hours each school day for nine months. In 1928-1929, the enrolment was 114; the average daily attendance, 89.2. There were 2 pre-kindergarten classes, one kindergarten, and 7 elementary classes. Nine academic, 5 industrial and vocational teachers, and one occupational therapist were employed. The regular school curriculum is followed. Teachers are required to have training in their special subjects. Follow-up services are maintained through cooperation with all existing social service agencies in the state for nursing, therapeutic services, and return of children to regular classes.

DESCRIPTION OF SOME PRIVATELY MAINTAINED INSTITUTIONS WORKING FOR CRIPPLED CHILDREN

In a few instances the educational work in privately maintained local residential schools or homes is carried on by local and state school funds. The reconstruction homes in Elmira, and Ithaca, New York, afford excellent examples of this type of cooperation.

The Children's Reconstruction Home, Elmira, New York

This home is a private institution in which children are placed by the Bureau of Physically Handicapped Children of the State Department of Education. The running expenses are met by the state and county funds which are administered through the bureau. The Home was established in 1922 by the Rotary Club which continues to bear the expense of maintenance. A medical board made up of physicians of the city gives free advisory service to the staff in problems concerning medical care. Twenty-six children were enrolled during the year 1928-1929, and on February 15, 1930, the membership was 26. The grade distribution was: 2, kindergarten; 20, elementary; 2, high school; 2, special prevocational work. Two paid teachers and one volunteer conduct these classes. Regular teachers are selected and paid by the local board; they receive \$100 additional compensation, and are required to qualify by special training in mental testing, mental hygiene and training, psychology, sociology, and occupational therapy.

The Reconstruction Home for Infantile Paralysis, Ithaca, New York

The educational program here is provided chiefly by the local Board of Education although it has been possible to add a high school teacher to the staff through the cooperation of the Bureau for Physically Handicapped Children. The local board furnishes all educational supplies and employs elementary teachers. The school is in session for five hours a day for a regular term of forty weeks, and for a seven weeks' summer school. The regular school curriculum is followed as far as the condition of patients will allow. During the school year 1928-1929 there were 34 children enrolled; on February 15, 1930, there was a membership of 20 in elementary grades, and 11 in high school. Orthopedic after-care treatments include muscle re-education, baking, hot bathing, and massage. Some vocational training is secured in local vocational schools, and it is reported that a considerable number of ex-patients are self-supporting in various callings.¹

LEGISLATIVE PROVISIONS AND POLICIES

The following states were chosen as representatives of the different territorial sections of the country, and a somewhat more extended analysis of the legislative provisions and administrative policies governing such classes has been made for those states in which after careful investigation of the needs in local communities a comprehensive educational program has been projected.

CALIFORNIA

Legislative Provisions

Powers and duties of local boards. Governing boards of school districts are authorized, if there are *any* crippled children in the district, to provide *suitable* educational opportunities through special classes, visiting teachers or other methods approved by the State Department of Education; cooperate with another district; employ persons needed to give children necessary care during the day; pay for transportation—must furnish

¹ New York State Education, January, 1930, pp. 411-414. Hutchinson, Harvey O., *The Children's Reconstruction Home of Elmira*. Kirkendall, Sarah M., *Reconstructing the Infantile Paralytic*. Supplemented by data from questionnaires.

for children unable to walk; provide for counseling and guidance; employ, with the approval of the state department, a special teacher-coordinator to study the employment possibilities of physically handicapped persons and coordinate the instruction of such pupils with the commercial and industrial pursuits of the community.

State and county aid. Excess cost over the average cost of educating a normal child in the same district is to be provided from state and county funds, but not to exceed \$100 each from state and county for each unit of average daily attendance. The Department of Labor and Industrial Relations shall, through the state employment service of the Bureau of Labor Statistics, cooperate with the various school districts and the department of education in the placement of physically handicapped individuals.

State supervision. The state superintendent is given general supervision of standards and methods; state aid is granted on condition of compliance with minimum state requirements. [1618 P.C. (1921) as amended by ch. 585, 1927 Laws.]

Development

The Bureau of Education of Crippled Children, one of the five bureaus in the Division of Special Education of the State Department of Education, was organized in 1927. It has supervision of the development of special educational facilities for crippled children throughout the state. Owing to its recent establishment, standards and policies have not been completely formulated. One of the first undertakings has been a survey of the school systems of the state to ascertain the number of children having handicaps and the type of educational work being done for them, and to study facilities for extending educational opportunities. Of the 1,848 orthopedically handicapped children discovered, 871 were receiving instruction in special public day schools and classes, and in hospital classes; 650 were in school without special instruction; 20 had no instruction, and 307 were having home teaching. Teaching crippled children in their own homes has been undertaken in Los Angeles and in the smaller places where no class has been organized. It is the policy of the Bureau to use this method only, when no other arrangement is feasible.

State and county reimbursement for excess cost. For the school year 1928-1929, the state appropriated \$95,474.73 for the reimbursement of districts for one half the excess cost of educating physically handicapped children; identical county funds to match the state apportionment brought the total amount expended by state and counties to \$190,949.46.¹ The total number of physically handicapped children receiving special instruction in 1928-1929 was 8,835, the number of crippled children, 1,178. The amount of excess cost for crippled children alone, borne by state and counties, may be estimated at about \$25,396.26.

CONNECTICUT

Legislative Provisions

Powers and duties of local boards. Town or district having "educationally exceptional" children may provide special instruction; upon petition of parents of ten or more such children over four and under sixteen, shall establish a school or provide for instruction in some other way.

State aid. None specified.

State supervision. Not prescribed, but "no educationally handicapped child shall be deprived of school privileges, except with the express approval of the secretary of the State Board of Education, and every child so excluded shall be brought to the attention of proper authorities to insure adequate protection and training." (1921 Laws, ch. 355; 1923 Laws, ch. 69.)

Development

Only one class organized in a local school district has been reported—that in New Haven, which in 1928-1929 enrolled 16 of the "most seriously crippled children of the city." Educational expenses were borne by the city; physical care provided by the Crippled Children's Aid Society of New Haven. The state program of special education centers in the Newington Home for Crippled Children, an account of which is given in another part of this report.

¹ "This does not include amounts actually expended by the districts." Excerpt from Report of Cal. State Dept. of Education, Div. of Research and Statistics, Nov. 19, 1929.

ILLINOIS

Legislative Provisions

Powers and duties of local boards. Any school district may establish classes and schools for resident crippled children between five and twenty-one; may employ necessary attendants; shall prescribe methods of discipline and courses of instruction; must appropriate annually a sum equal to the total per capita cost of educating a like number of normal children to be used wholly for instruction of crippled children. Truant officers must enroll every crippled child annually in the school nearest his residence.

State aid. The state shall pay the aggregate excess cost of such instruction over the average cost of instruction of normal children, provided excess cost does not exceed \$300 per pupil per annum.

State supervision. State aid is granted on condition of approval of such classes by the state superintendent. (Act of June 19, 1923, as amd. June 30, 1925. Smith Hurd. Rev. Stat., 1929, ch. 122)

Development

The development of the special school program under the Illinois law pertains especially to communities outside Chicago, the Chicago program having been established much earlier. For the school year 1928-1929, 5 cities outside Chicago have reported special schools or classes, the total enrolment being 164; other official reports give 3 additional classes with an approximate enrolment of 45. The county-wide school at Marion enrolling 26 children, and the special class at Herrin enrolling 30 "city children and those near by" are demonstrating the feasibility of caring for rural children by a system of transportation to a centralized school. In a number of districts receiving state aid for special teaching, the work is being done by special tutors giving home instruction. The lack of physical and psychological care for these children, and especially the neglect of the spastic child, are bringing out clearly the advantages of the county-wide school plan. During 1928-1929 there were 1,845 children enrolled in the special schools and special school units in Chicago.

State reimbursement for excess cost. During 1928-1929 the state expended \$44,209.12 to pay excess cost of educating crippled children in 39 different centers in 30 counties outside Chicago; out of the appropriation of \$100,000 the remainder went to Chicago in part payment of the claim of \$404,697.40.¹

INDIANA

Legislative Provisions

Powers and duties of local boards. Any local school corporation having ten or more children who "on account of physical disability cannot be taught advantageously in regular classes" may establish special classes, or do so jointly with another school corporation, prorating the cost on the basis of average daily attendance; may provide transportation and lunches; where there are fewer than 10 children, the district may transfer and pay actual cost of instruction.

State aid. The state is required to reimburse the district maintaining a class or providing instruction by transfer of an amount equal to three-quarters the cost of such instruction in excess of the cost of the same number of children in regular classes.

State supervision. The State Board of Education is to make regulations for the administration of such classes. (1927 Laws, ch. 211.)

Development

Special classes are reported from only three cities of the state, the total enrolment for the year 1928-1929 in the three cities was only seventy. In Indianapolis, the special equipment, lunches, and a part of the service of special attendants and nurses have been furnished by the Indianapolis Foundation. The school board has maintained two academic teachers in the James Whitcomb Riley Hospital for Crippled Children.

No report on state expenditure for excess cost is available.

MARYLAND

Legislative Provisions

Powers and duties of local boards. County boards of education are authorized to establish special classes and may employ additional teachers where there is physical disability tending to

¹ Information from Director, Department of Public Welfare, March, 1930.

prevent the child's receiving the full benefit of school work, or requiring modification of school work, or it is necessary to prevent injury to the child, or to secure the best educational results. (1914 Laws, ch. 165.)

Under the new law, effective June 1, 1929, the enumeration of all children by county boards of education through regular and special census, and by the police commissioner of Baltimore is required, with a special record of the names and addresses of all physically handicapped children to be sent to the State Board of Education which in turn must furnish a list to the State Board of Health. It then becomes the duty of the State Board of Health to cause each child to be examined and classified, and to designate such children as need clinic, therapeutic, or hospital care and report them to their respective districts where they shall be assigned according to their several needs with reference to the available school facilities in accord with the ruling of the State Board of Education.

State aid. Cities or counties providing schools or classes in accordance with requirements of the State Board may receive \$2,000 toward the cost of special equipment, teachers and attendants, provided such class have not less than ten physically handicapped children, and as many more as the Board may direct. Meals, nursing, therapeutic treatment, and transportation are included for reimbursement.

State supervision. The State Board of Education has general supervision, and shall prescribe the equipment and curriculum.

Development

Little has been accomplished under the new law though a considerable development is projected. The last legislature appropriated \$100,000 for the use of the State Department of Education in organizing special classes, \$10,000 to the Children's Hospital School, and \$13,000 to the Kernan Hospital School, both private institutions in Baltimore. The only children in the State receiving special education in public schools are those in Baltimore where the special school for white children enrolled 201 in 1928-1929, and that for colored children, 70. State aid was not available for the school year 1928-1929.¹

¹ Information from Exec. Sec'y, Md. League for Crippled Children, April, 1930.

MICHIGAN

Legislative Provisions

Powers and duties of local boards. Upon petition of parents of five or more crippled children, six to twenty years of age, the district board may establish classes which shall be in rooms properly equipped; if no class is established, they may pay tuition and transportation to a school maintaining a class. Separate instruction must be provided if there are crippled children in the district. Districts maintaining classes shall report annually to the state superintendent, showing itemized cost of such classes, and shall include in the annual budget a sufficient sum to provide for special service to pupils, for maintenance of such classes and to pay the teachers.

State aid. Districts maintaining classes approved by the state are entitled to state reimbursement for expenditure for special equipment and instruction above the average per capita cost of the same in the first eight grades, up to \$200 per pupil per year. State reimbursement to \$200 per annum for each child is allowed to the State University Hospital and to other hospital schools for academic instruction (including bedside instruction) and vocational training, approved by the Michigan Commission for Crippled Children.

State supervision. Courses of study, adequacy of methods of instruction, selection and location of rooms, qualifications of teachers and conditions under which they are employed, and any special services must comply with the requirements of the state superintendent of public instruction. (Ch. XIX, Act 319, Public Acts of 1927.)

Development

Supervision of special classes for crippled children is delegated to the State Director of the Division of Special Education. During the school year 1928-1929, special schools or classes were maintained in the public schools of 17 cities; in 1929-1930, such classes were established in 7 additional cities; the total enrolment in public school classes in 1928-1929 was 1,289. Home teaching is carried on to some extent by local boards, but state reimbursement is allowed only for classes in "rooms properly equipped." It has been found that classes can

be successfully maintained in cities of 5,000 and 10,000 population. Cardiac cases are very often cared for in the orthopedic classes in Michigan.

State reimbursement for excess cost. For the year 1928-1929 per capita costs varied from \$175.99 to \$471.75, the average per capita cost for crippled children in the 17 cities being \$291.03. The per capita cost for normal children in these cities varied from \$40 to \$100.56, the average for the 17 cities being \$64.17. The average difference in per capita costs for crippled and normal children was \$226.86. The total cost of the special classes was \$280,882.41; the total amount reimbursed to the cities was \$188,612.13. The percentage of the total cost for each kind of service allowed for state reimbursement was: for teachers' salaries, 42 per cent; transportation, 35.3 per cent; special services, 12.8 per cent; lunches, 7.2 per cent; special equipment, 2.4 per cent.¹

MINNESOTA

Legislative Provisions

Powers and duties of local boards. District school boards may establish and maintain special classes for crippled children providing there are 5 or more in each class, upon permission of the state commissioner of education.

State aid. The state shall pay \$200 annually to any district maintaining such class for school expenses including salary of teachers and nurses, transportation, special supplies and equipment, for each child attending for nine months, or a proportional amount for less time.

State supervision. Courses, instruction, supervision, employment of teachers, and equipment must comply with state requirements. (1921 Laws, ch. 141). Under a new law (ch. 277-S. F. No. 694, 1929) provision is made for the enumeration, reporting, and maintaining of a permanent record of all children having physical defects which might result in permanently handicapping the child, and for the cooperation of the State Departments of Education, Welfare, and Health, in the program of prevention, education, and institutional care.

¹ Lee, John J., *Michigan's Program of Special Education for Its Physically Handicapped Children*, 1930, pp. 7, 9, 19-25.

Development

In 1928-1929 the two cities, Minneapolis and Duluth, were maintaining classes in public schools. Minneapolis had a special school and in addition maintained one special class in a high school; the total enrolment for the city was 205. In Duluth, there was a special class with an enrolment of thirty-six.

State reimbursement for excess cost. The state paid to Minneapolis for the special school and class, \$41,500, and to Duluth, \$6,650. These are the amounts before the final prorating of 96.2 per cent to which all state aid was subject for the year.¹

MISSOURI

Legislative Provisions

Powers and duties of local boards. School boards in districts having 10 or more crippled children are authorized to provide appropriate instruction in special classes in elementary grades and transportation to and from school. They may also join with other districts in forming classes if there is no accommodation in state establishments.

State aid. To districts maintaining approved classes, the state must pay \$750 per annum for each teacher wholly employed in such instruction, but not more than two-thirds of the teacher's full salary. The state is authorized to provide instruction through the State Board of Charities for children under sixteen who have not completed the eighth grade, if no special class or instruction is provided in the district.

State supervision. The state superintendent is authorized to inspect and approve classes and instruction. State aid is granted on condition that the teacher is especially trained for the work in compliance with requirements established by the state superintendent. [1921 Laws, H. B. 214 (R. S. 1919) 11147-50.]

Development

Special supervision of classes for crippled children in the State Department of Education is under the director of physical education. During the year 1928-1929 there were 249 children enrolled in the public school day classes in St. Louis, and 25

¹ Information from Director, Special Classes, Minn. Dept. of Education, March, 1930.

in Kansas City. There were 140 children enrolled in the hospital classes of these cities.

State reimbursement for teachers' salaries. The total amount paid by the state was \$15,750.¹

NEW JERSEY

Legislative Provisions

Powers and duties of local boards. The board of education in every school district shall provide special equipment and facilities adapted to the accommodation, care, physical restoration, and instruction of children of school age who are crippled to such an extent, or possess such bodily deformities, that they cannot, in the opinion of an orthopedic surgeon of recognized standing or the medical inspector of the district, be properly accommodated and instructed in regular classrooms; such special facilities shall include, when recommended by the commissioner of education: (a) home teaching, bedside instruction, and transportation; (b) payment of tuition in and transportation to a special class, or maintenance while being away from home to attend a special class in another district; and (c) scholarships in vocational and technical schools, provided that not less than five hours of individual home or bedside instruction be given each week and considered equal to one week's work in a special class; if there are eight or more such children in a district the board shall establish a special class, provided that no class contain more than shall be approved by the commissioner of education and provided that the board may arrange with another board for accommodation in a special class. With the approval of the commissioner of education, local boards may establish classes in hospitals, convalescent homes and other institutions, county and state money to be available for such classes as for regular school classes. It is the duty of every board to make a register of physically handicapped children from birth to twenty-one years of age, specifying names, addresses, and ages as specified by the commissioner of education, copies to be forwarded at least once a year to the commissioner of education who in turn shall furnish copies to the commissioner for the rehabilitation of handicapped

¹ Information from Director of Physical Education, State Dept. of Education, March, 1930.

persons. The medical examiner of the district shall examine children as often as necessary, and may cooperate with the rehabilitation commission and local orthopedic surgeons for this purpose.

State and county aid. When any school district shall establish such class, the county superintendent shall apportion \$500 annually for each teacher employed; and for each home teacher an amount approved by the commissioner of education. Districts shall be entitled to state reimbursement for one-half excess cost upon the fulfillment of prescribed conditions.

State supervision. The commissioner of education is authorized to recommend and approve equipment facilities and methods of instruction; state aid is granted upon compliance with minimum standards. (1928 Laws of N. J., ch. 53; 1928 Laws of N. J., ch. 54.)

Development

Owing to the recent passage of the law there has been comparatively little development in the special class program contemplated by its provisions. Continued work in studying the situation in the state has been carried forward by the State Temporary Commission in cooperation with the local lodges of the Elks. The names of 10,019 children discovered in the 1927 survey were distributed to the local lodges for contact investigation. This number was increased by 2,392 new cases; 740 cases were eliminated, leaving a new total of 11,671 cases. Of these, 9,301 have been reported on; 2,533 are found to require examination or re-examination; 363, educational and 1,130 vocational provision; and 431 were apparently in need of institutional care. The names of 363 children of school age not attending were sent to local departments of education. Investigations were made by nurses and social workers and in every case visits were made to children's homes and the parents interviewed.

There were 683 children enrolled in special classes on June 30, 1929: in Camden, 18; Newark, 322; Bayonne, 37; Hoboken, 10; Jersey City, 250; Paterson, 29; Elizabeth, 17. This number represented an increase of approximately 74 per cent over the enrolment in 1927. No data are available as to the number having home instruction but "indications are that this

work has increased." In January, 1929, eight hospitals and institutions reported classes. Arrangements have been made with practically all vocational schools whereby all cripples will be given an opportunity for vocational guidance and training. A beginning has been made in the application of the county appropriation law; appropriations for 1930 were made in 17 out of 21 counties in amounts varying from \$500 to \$20,000. Reporting of congenital cripples has been initiated through the Department of Health; the Department of Education has acquainted local boards of their powers, and the Rehabilitation Commission has begun centralizing information and maintaining a permanent register.¹

NEW YORK

Legislative Provisions

Powers and duties of local boards. Boards of education are authorized to establish such special classes as may be necessary when there are 10 or more crippled or otherwise physically defective children. Districts may contract with cities or districts wherein classes are established. They may provide kindergartens for children from four to six, scholarships which may include tuition and maintenance in high schools, colleges, universities, and technical schools; they may provide teaching services in hospitals and convalescent homes, transportation, home teaching, and, on recommendation of the State Department of Health, may provide for surgical care and supply crutches, braces, or other appliances.

State aid. Provision is made for the reimbursement of counties for one-half the orders issued by children's court judges for health and education, provided these orders meet the approval of the Commissioners of Health and Education.

State supervision. The administration of the several laws relating to the education of crippled children is the responsibility of the State Department of Education. (1920 Laws, Ch. 760; 1925 Laws, Ch. 227; 1926 Laws, Ch. 817 amended by 1927 Laws, Ch. 492; 1929 Laws, Ch. 571.)

¹ N. J. Temporary Commission for Inquiry Relating to the Condition and Distribution of Crippled Children, Report, Jan. 31, 1928; Report, Feb. 25, 1930. Information from Chairman, N. J. State Temporary Commission, March-April, 1930.

Development

Under the Education Law of 1925 as amended up to and including 1929, provision is made for the physical care, education, and vocational training of crippled children. The Bureau for Physically Handicapped Children in the State Department of Education, primarily responsible for inaugurating the programs for special education in cooperation with local public school systems, works in close touch with the orthopedic unit in the State Department of Health in carrying out orders issued by children's court judges covering physical care and education of children for whom such service is not available because of the financial status of parents or guardian. Such service is established because of the physical defect without reference to the person's rights under the poor law or other welfare laws. While the county is liable for the expense, the judge has the right to charge any portion of the cost of an order to the parent. This law is very important in providing service for children in rural sections, many of whom had never had any opportunity for education up to the time this service was arranged for them. Through a definite follow-up relationship established with the Bureau of Rehabilitation, late adolescent cases are provided specific vocational training and placement service.

During the year 1929, there were 792 physically handicapped children receiving aid from the state: 458 for health care only, 258 for health and education, and 76 for education only. Of these, 204 were of preschool age, 427 of from seven to fourteen years, 133 of from fifteen to eighteen, and 28 over eighteen. Classified according to disability, there were 421 infantile paralysis cases, 79 tubercular bone, 146 congenital, 42 rachitic, 32 traumatic, 46 osteomyelitis, and 31 others.

State and county expenditures. The per capita cost of these services was \$222.80; the total expenditure by State and Counties was \$175,889.81.

Special day classes in which both educational and physical care are under public school administration have been established in Binghamton, Rochester, and Syracuse. In Buffalo, the special school is located near the City Hospital which provides physical care. In Ithaca and Elmira, the local boards of education provide the teachers and supervise educational work in the reconstruction homes. In other cities throughout the state,

local boards usually provide teachers in hospitals, and in some cases, for home tutoring.¹ The New York City program is given in another part of this report.

OHIO

Legislative Provisions

Powers and duties of local boards. Upon petition of parents of eight crippled children over five years of age, the school district shall apply to the State Director of Education for permission to establish a special class. Under direction of the State Director, school districts are required to pay for transportation, tuition for children attending classes outside the district, to provide home teaching, and bedside or ward group teaching in hospitals.

State aid. The State Director of Education is authorized to reimburse school districts up to \$300 a child per year for excess cost over that of educating a normal child in the same grade, to \$250 a child per year for cost of boarding children who cannot be transported, and \$300 a child per year for home instruction.

State supervision. Standardization and supervision of the development of the work of local boards is the duty of the State Director of Education. (Special Education Laws—Secs. 7755, 7755-1 to 7755-5; 7803 and 7803-1, Gen. Code of Ohio.)

Development

Supervision of the development of the state and local programs of special education for crippled children is the work of the State Director and an associate director.

During the year 1928 to 1929, there were 1,293 children enrolled in special public school day classes, 400 in hospital classes, and 195 having home instruction for whom the state reimbursed local boards. Sixty-two counties out of a possible 88 participated in the subsidy granted by the state; 111 districts gave instruction to children in their own homes.

¹ Articles in *New York State Education*, Jan., 1930, by Joseph J. Endres, Chief, Bureau for Physically Handicapped Children, Walter J. Craig, Director, Division of Orthopedics, State Department of Health, and others.

SPECIAL EDUCATION

Cost and state reimbursement. Per capita costs vary greatly over the state, as do costs of classes for normal children. Costs covered by state subsidy include, among other things, expenditures for equipment, supplies, appliances, physical care, such as transportation, warm lunches, and physiotherapy. The actual reimbursement is much less than the maximum subsidy of \$300 allowed.

Average excess cost paid by the state over the normal per capita cost in school districts maintaining a special school or class for the year 1928-1929	\$174.74
Average excess cost paid by the state for day schools and classes alone	209.89
Average cost of home instruction	95.79
The average normal per capita cost was..... (elementary costs only, except in some five instances where junior high costs are included)	68.00

The normal per capita cost must be added to the excess cost to determine in a general way the total average per capita.²

PENNSYLVANIA

Legislative Provisions

Powers and duties of local boards. Districts wherein children of exceptional physical condition are duly reported by the medical inspector as fit subjects for special education and training are required to maintain special classes alone or jointly with other districts. If it is not feasible to form a class of ten or provide training within the district, the director shall secure training in outside institutions or in the child's home.

State aid. Districts which provide special classes approved by the State Council of Education shall be aided by the state.

State supervision. The State Superintendent is required to superintend the organization of classes and enforce provision for crippled children. (1925 Laws, Ch. 70, and Ch. 76.)

² McIntyre, Hazel H. *Ohio's Program of Special Education for Crippled Children.* Monograph prepared for the White House Conference Report on Special Classes for Crippled Children, March, 1930.

Development

Supervision of special classes for crippled children is delegated to the State Director of Special Education. During the school year 1928-1929, four school districts were providing special instruction. In Philadelphia and Erie, these classes are in public school buildings; in Pittsburgh, the school board provides two teachers in the Industrial Home and Training School for Crippled Children, a private home; in Johnstown, the district provides a teacher in a local hospital.

State aid is granted to local school districts on the basis of the minimum salary of an elementary school teacher. Philadelphia and Pittsburgh, first class districts, receive \$300 additional appropriation on the basis of 25 per cent of the minimum salary of \$1,200; Johnstown and Erie, second class districts, receive the same amount on the basis of 30 per cent of \$1,000 minimum salary. Appropriations for special classes are part of the general appropriation for public school purposes. Since 1923 sufficient funds have been available to fully reimburse districts maintaining special classes.¹

WISCONSIN

Legislative Provisions

Powers and duties of local boards. Upon application of a local board of education to the State Superintendent, he may authorize such board to establish a special day school for physically disabled children, or a special class for the instruction of exceptional children. (Physically disabled children, six to eighteen, must attend public, private, parochial, or state school for eight months each school year, except if over sixteen, having completed 8th grade and regularly employed. Parents failing to comply are liable to prosecution.) The board of any school or class shall admit non-resident children when facilities warrant, tuition not to exceed \$2 per week to be paid by the district of the child's residence when such district does not maintain a class.

State aid. The state shall pay a sum equal to the amount expended for teachers' salaries, board and transportation of pupils, special books and equipment, and such other expenses as shall be approved by the state superintendent in excess of \$70 per child, provided it shall not exceed \$300 for a child residing

¹ Information from State Director of Special Classes, April, 1930.

within the district, \$450 for a child residing outside the district but within the state, and \$150 for transportation for a child who may be suitably served in a regular school, on the basis of nine months' attendance. [20.32(1) (xa).] By amendment, 1929, the cost of academic instruction in hospitals for crippled children where the number needing instruction warrants, the cost of the establishment of a class may be paid out of the fund for children physically disabled. [20.22(1) (dm).]

State supervision. Courses of study, qualifications of teachers, and organization, must comply with requirements of the State Superintendent, who shall appoint within his department persons of suitable training and experience to supervise such classes, examine, test, and classify pupils, applying for admission. (1927 Laws, Ch. 488.)

Development

Supervision of special classes is vested in a Director of the Crippled Children's Division, Department of Public Instruction. The Wisconsin program of special education for crippled children developed under the legislation of 1927, no special classes having been organized before that time. The Wisconsin law, together with its program of development, offers points of especial interest in the development of a program in the rather closely populated communities typical of the Middle West. The population of the state is fairly well distributed; there are fifteen cities of 25,000 or more with a thickly settled rural area around them. Upon the basis of intensive surveys of selected counties, it was decided to establish classes in cities having a population of 25,000 or more. Provision was made in the original law for transportation of children to regular schools. This has served as a temporary measure pending the time that special classes are being established, and will continue to be of value to the crippled child in the rural section or small town who does not need the supervision of a special class but is handicapped in walking to school. Rural school boards co-operate in providing an inclined entrance, special desk or cot. No child is brought from a rural district unless he needs the care of a physiotherapist. Home teaching is advocated only as a "last resort." When a rural child must have scientific supervision of physical care, arrangement is made for his maintenance at one of the special class centers. The fund of \$150 allowed

by the state for this purpose is usually supplemented by the family or the community.

Number of children under twenty-one having special advantages for education, July 1, 1928 to June 30, 1929:

Transportation to regular schools	279
128 cases in cities and towns, 151 cases in rural areas,	
21 used aid for maintenance in lieu of transportation	
Enrolled in special classes	159
Enrolled in regular class but had services in special class	66
Hospital classes	27
Home teaching	69
	<hr/>
	600

Received vocational training under the rehabilitation division:

a. Vocational schools	128
b. University of Wisconsin	21
c. Colleges and normals	37
d. Correspondence	10
e. Tutorial	2
f. Private business schools	24
g. Private trade schools	4
h. Employment training	10
	<hr/>
	236

The appropriation for state aid for special educational facilities is \$15,000 annually for administration, and for aid to classes \$100,000 annually.¹

Laws relating to special classes or other special provisions for the education of crippled children have been enacted in other states, but little or no information has been available concerning development under them.

KENTUCKY

In 1928 the legislature authorized local boards of education to use any funds realized from local taxation in such amount as seemed

¹ From Report to the White House Conference on Special Classes for Crippled Children—State of Wisconsin, by Marguerite M. Lison, Director, Crippled Children Division, Department of Public Instruction, March, 1930.

reasonable to provide for transportation of crippled children to local schools. (1928 Laws, p. 20.)

LOUISIANA

The law authorizes parish boards of education to organize and maintain special classes for physically deficient children who cannot be properly cared for in regular public schools. The course of study shall be approved by the State Board, and state aid is authorized, to be paid out of available funds at the disposal of the Board. (1920 Laws, Act 74.)

The New Orleans Parish Board has organized classes for physically handicapped children including crippled, according to information from the State Department of Education, March, 1930, but no report on these classes is available.

MASSACHUSETTS

The Massachusetts law provides that if any town, with the approval of the State Department of Education, pays for high school instruction for a pupil of physical disability in another town, the state is required to reimburse such town therefor under the same conditions and to the same amount as for tuition in such school and for transportation thereto, but not more than \$100 a year in lieu of tuition plus \$1.50 per week of actual instruction in lieu of transportation.

No report on extent of this type of provision has been available.

OREGON

In the Oregon law the crippled child eligible to special educational provision is defined as a child so physically incapacitated as to be unable to leave his home, and the condition must have persisted for six months. Enrolment of crippled children from six to eighteen years of age who have not had the education in the first eight grades of the district, by parents or guardian is required. A special fund known as the "crippled children's instruction fund" must be maintained by the various district school boards, and competent "hourly teachers" are to be employed under the supervision of the State Superintendent of Public Instruction. (1923 Laws, ch. 88, p. 122.) Home teaching is provided to a limited extent in some of the larger cities.

In other states the education work for crippled children in public schools is carried on entirely by local school boards.

THE BLIND AND THE PARTIALLY SEEING
THE PARTIALLY SEEING

THE PARTIALLY SEEING

THE PROBLEM

THE problem confronting educational authorities is to provide special educational facilities, without injury to their sight or to their general health, for two groups of partially seeing children: those who because of progressive eye difficulties may be harmed by the use of the regular school equipment; those who because of static low vision, or vision impairment from disease of the eyes, cannot use it.

In educational work as new as that in sight-saving classes, although the experimental stage is past, it is difficult to do more than estimate the number of children requiring this special method of education.

The most conservative estimate is one pupil in 1,000 of the school population, but in states that have had the greatest experience in this work it is one pupil in 500 of the school population.

Carefully compiled statistics from the 95 cities and towns which have classes show the median ratio of one sight-saving class pupil to 659 of the total school population, but few communities are justified in claiming that all their partially seeing children are being cared for. Moreover, the list includes several cities with large school enrolments which have as yet established only one or two classes, hence it would seem as though this ratio understates the actual number. (See Appendix, Table I, p. 225.)

Since the latest available statistics give the school population of the United States as a little over 25,000,000; the number of children needing the advantages of sight-saving classes, according to the most generally accepted estimate just quoted, namely, one to 500 of the school population, would be 50,359 candidates.

The 350 classes in existence January 1, 1930, are caring for 4,829 pupils. It is evident, therefore, that approximately 45,500 partially seeing children are still unprovided with educational facilities suited to their needs.¹

Number
of
pupils

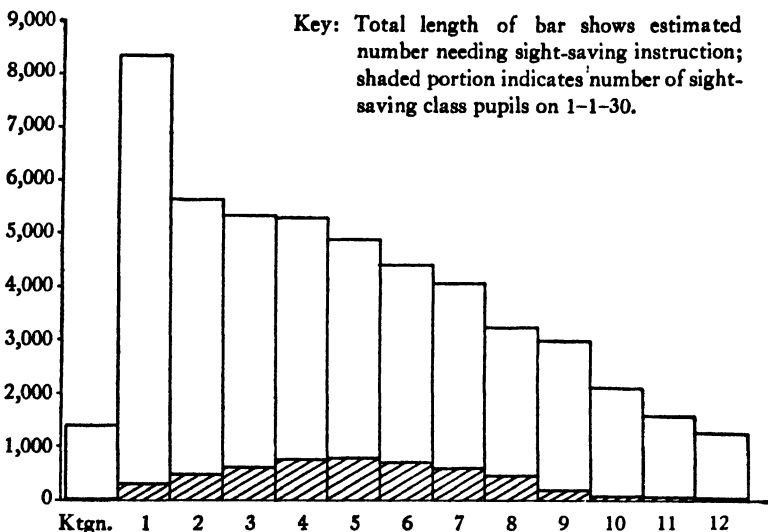


CHART I. GRADE DISTRIBUTION OF PUPILS ENROLLED IN SIGHT-SAVING CLASSES COMPARED WITH NUMBER NEEDING SPECIAL SIGHT-SAVING INSTRUCTION

Grade

Pupils needing sight-saving instruction

1,391 8,342 5,633 5,324 5,265 4,781 4,487 4,043 3,181 2,952 2,091 1,535 1,244

Pupils in sight-saving classes

2 300 463 594 735 768 671 586 420 154 56 45 35

In the majority of states having regulations for the establishment of sight-saving classes the generally accepted minimum for a class is 10 pupils; in the classes now in existence the median number of pupils is 13; hence, the

¹ Since these statistics were gathered for this report, 25 additional classes have been established.

THE BLIND AND PARTIALLY SEEING 117

most conservative estimate indicates that at least 3,500 additional classes are necessary.

Table 1 and Chart I show a comparison between the number of partially seeing children being cared for and the number that should have special educational advantages because of eye handicap, less than 10 per cent being in the former group.

TABLE 1

NUMBER OF PUPILS ENROLLED IN SIGHT-SAVING CLASSES COMPARED WITH ESTIMATED NUMBER NEEDING SPECIAL SIGHT-SAVING INSTRUCTION, SHOWN BY GRADE GROUPS

Grade group	Total pupils enrolled in United States (all classes)	Estimated number needing sight-saving instruction	Pupils in sight-saving classes on Jan. 1, 1930	
			Number	Per cent of number needing sight-saving instruction
Kindergarten.....	695,490	1,391	2	0.1
Elementary (grades 1-6) ..	16,960,937	33,922	3,531	10.4
Junior high (grades 7-9)	5,087,914	10,176	1,160	11.4
Senior high (grades 10-12)	2,435,355	4,870	136	2.8
<i>Total</i>	25,179,696	50,359	4,829	9.6

Notes: Figures for school enrolment are for the school year 1927-28 and cover public day schools. Figures for sight-saving class pupils actually enrolled were supplied by sight-saving class teachers and supervisors. The ratio of 1 to 500 was used to obtain the estimated number of pupils needing special sight-saving instruction.

These data tend to show that the problem of educating partially seeing children is being recognized; that an effort in the right direction is being made by some educational authorities; but that the extent of the problem is greater than was at first conjectured.

EXISTING PROVISIONS

RECOGNITION OF THE PROBLEM

Educational leaders in early American history took cognizance, so far as the sense of sight, the highroad of educational approach to the brain, is concerned, of but one group—the normally seeing. As a result of efforts made to provide

educational opportunities for blind children in the United States, the first school for the blind was established in 1831.

Between the two extremes, the normally seeing and the blind, there existed a group having too much sight to be educated through the sense of touch, yet too little to use advantageously the facilities provided for the normally seeing.

Prior to the second decade of the twentieth century such children got along as best they could. In many instances they kept pace with their companions, usually at the expense of their sight or their general health. In other instances they became chronic repeaters, leaving school at the earliest opportunity, and, because of their handicap combined with their lack of education, drifted into blind alleys of employment. In still other instances physicians recommended exclusion from school as the lesser of two evils. Parents with means to do so provided for such children educational opportunities with tutors or governesses. Parents who could not afford to do so, let these children drift, in some cases making them household drudges. One other door was open to them, that of a school for the blind, quite as unfitted to their needs as the regular school classes. The problem of what to do educationally with such children was a vital one.

Edward E. Allen, as superintendent of a school for the blind which had, however unwillingly, accepted these children, knew the problem from practical experience. While making a study of the work for the blind in England in 1909, he learned of the special myope classes that had been established there the previous year for the education of children suffering from myopia. On his return to the United States he made every effort to establish such classes. This, however, was unavailing until 1913 when Helen Smith, a teacher with a pioneer spirit, backed by the resources that Perkins Institution and Massachusetts School for the Blind had to offer, gathered together a small group of partially seeing children in Roxbury, Massachusetts, and in April of that year laid the foundation of the present-day national

effort to make education possible for partially seeing children by adapting curricula and educational material to their needs. In contradistinction to the London myope classes, the Roxbury class accepted children suffering from any eye difficulty that made this special type of education desirable except, of course, those having communicable eye diseases that might be a menace to the other children.

In September of the same year, Robert B. Irwin, who was in charge of classes for blind children in the public schools of Cleveland, Ohio, followed the example of Massachusetts by opening in Cleveland the second special class of this type in the United States.

Nomenclature. Special classes for the education of partially seeing children were at first called *classes for the partially blind*. This, however, led to considerable confusion and lack of differentiation between blind and partially seeing children and was soon recognized as too negative a term. Considerable thought was given to the selection of an appropriate title. Since one of the chief reasons for establishing these classes was to conserve sight, and since conservation of national resources was at that time a current topic, the term, *conservation of vision classes*, was selected and used for several years. This was later designated as somewhat bombastic; various places began to use different names such as *classes for the partially sighted*, *classes for conserving sight*, *sight conservation classes*, and so forth. The necessity for a uniform name was soon realized and there developed the less clumsy title of *Sight-Saving Classes*. This is expressive of the main object for which such classes were originally established—saving sight. But it is not quite accurate, since children in such classes are divided into two groups: those with progressive eye difficulties that may grow worse under unfavorable conditions, and those whose eye difficulties are static.

Growth of the Work¹

Slowly but steadily the number of classes has increased until at the opening of the year 1930 there were 350 such classes, as shown by Chart II.

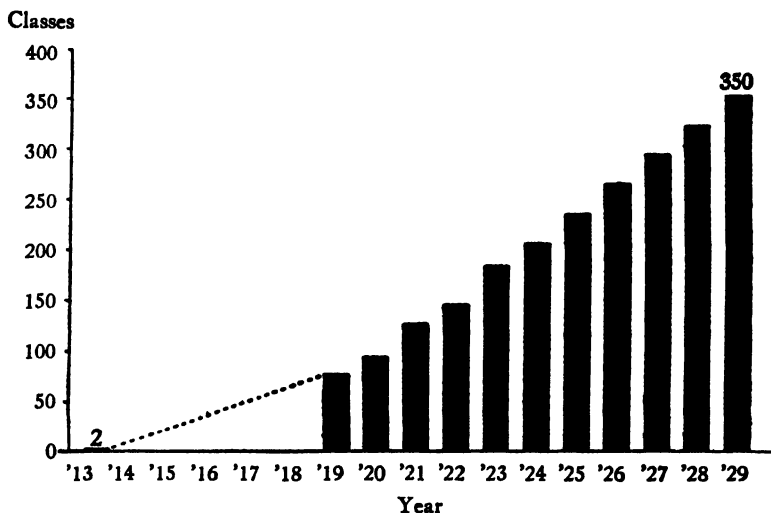


CHART II. A. GROWTH IN THE NUMBER OF SIGHT-SAVING CLASSES IN THE UNITED STATES FROM 1913-1929

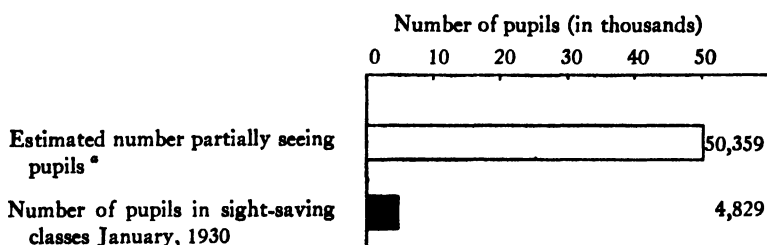


CHART II. B. NEED FOR MORE SIGHT-SAVING CLASSES

*The ratio of one out of 500 of the school population was used in estimating the number of partially seeing pupils.

Although no state is at present in a position to claim that all partially seeing children within its borders are being

¹ Since the completion of this survey, January 1, 1930, 25 additional classes have been established.

provided with educational opportunities suited to their needs, it is noteworthy that 21 states, representing 93 cities and 2 counties, have demonstrated that classes can be established and that they are gradually being accepted as a necessary part of the school system. Ohio stands at the head of the list since it has the largest number of classes in proportion to the school population. It has established 62 classes in 24 cities and one county class. The states having classes are given in order of rank according to the number of classes provided in proportion to population (see Chart III) :

Ohio, Michigan, New York, Massachusetts, Minnesota, Washington, Illinois, Rhode Island, California, Louisiana, Connecticut, Virginia, Missouri, New Jersey, Pennsylvania, Maryland, Wisconsin, Indiana, Nebraska, Georgia, Iowa.

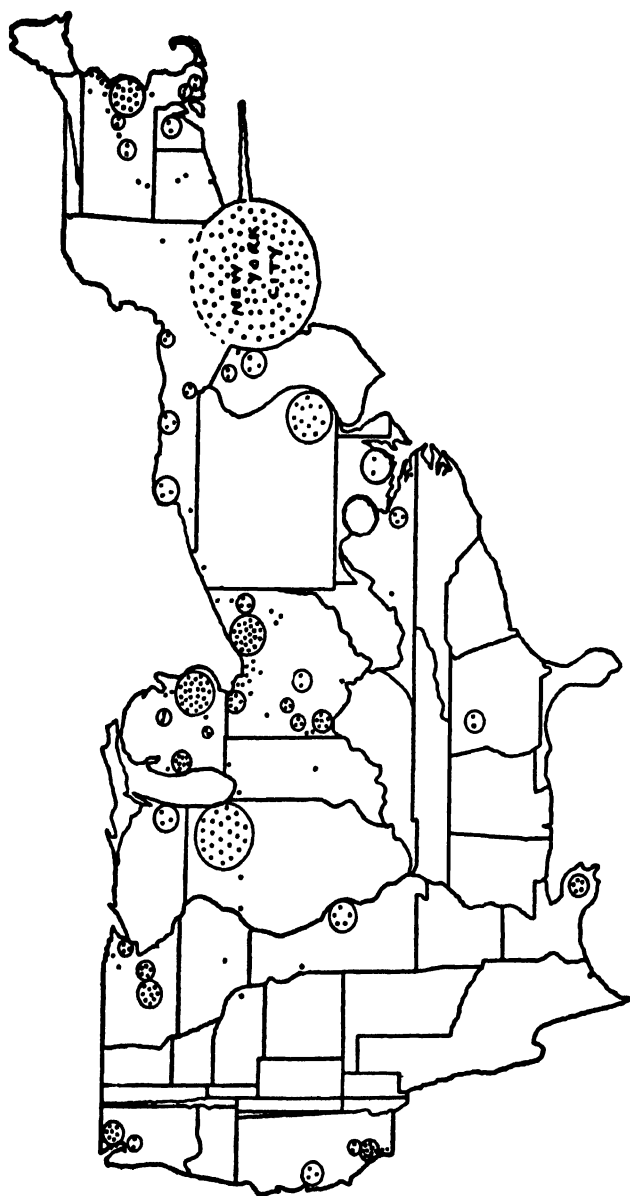
HEALTH OF PARTIALLY SEEING CHILDREN

So far as the general health of children in sight-saving classes is concerned, no differentiation is made between them and normally seeing children, except that, inasmuch as eye conditions may react on the general health and the general health upon eye conditions, special efforts are made to see that the general health is kept as nearly up to normal as possible; otherwise the care taken in sight-saving classes to conserve sight may not result in the greatest benefit.

Since the subject of medical service for children is presented in the report of other committees, no details are here considered.

Candidacy According to Eye Health

Before the eye health of children in sight-saving classes can be considered, it must be decided what children are candidates for these classes. This presupposes a knowledge of the types and degrees of eye difficulty that make it desirable for a child to be educated in such a class. So varied are the regulations of different communities that a child eligible to a sight-saving class in one state may or may not be a candidate in another state, or even in a different city of the same state. Efforts have been made from time to time to reach



From K. G. Karsten's "Charts and Graphs" by permission of Prentice-Hall, Inc.

CHART III. MAP SHOWING LOCATION OF SIGHT-SAVING CLASSES, JANUARY, 1930

On this map the size of states is in proportion to the size of population. Each spot represents a class. Where there is more than one class in a city the spots have been circled.

common ground but the very nature of the problem makes this more difficult. It may be found that two children having the same degree of low vision react quite differently. One child with such limitation of vision may learn to interpret his visual impressions, however indistinct they may be, much better than another child with the same visual acuity. The actual acuity of the first child may not improve, but his mental images of what he sees may gradually become clearer through his powers of interpretation. He may, therefore, be able to depend upon his visual images to an extent that will permit him to carry on his work in a sight-saving class; the other child having the same visual acuity may, because of his lack of power of visual interpretation, be obliged to use the sense of touch rather than the sense of sight as his chief educational aid.

The great stumbling block, however, in determining the candidacy of children for sight-saving classes is myopia. Although special classes in England were established essentially for myopes, there is great diversity of opinion as to whether children suffering from myopia do or do not belong in sight-saving classes. There is a group of ophthalmologists who believe that myopia in a progressive form will continue to progress under any circumstances; that school work has no effect upon the condition of myopic eyes; and that, therefore, children having progressive myopia can undertake work in regular grades just as well as in special classes. As an argument, they point to myopia in peoples that have never used printed material.

At the other extreme is a group of ophthalmologists whose opinions are well represented by the following:

The etiology of progressive myopia is still obscure, but the consensus of opinion now favors the theory that the basic factor is a congenital lack of toughness of the sclerotic, often hereditary. . . . As regards the causative factor, it has definitely been proved that excessive convergency and faulty posture, associated with an excessive amount of near work such as is demanded by the curriculum of the modern school child, plays a highly important part in the production of an increase of myopia. Such being the case, the most obvious method

of preventing this increase would be to prohibit all scholars suffering from progressive myopia from performing any kind of near work whatsoever; in other words, to prohibit these children from attending school.¹

Between these two extremes are found many opinions, among which are the following:

1. As soon as progressive myopia is discovered in school children or in children about to enter school, such children should be placed in sight-saving classes.

2. Children of school age with four or more diopters of myopia are candidates for sight-saving classes.

3. Children of school age with eight or more diopters of myopia are candidates.

4. Children suffering from progressive myopia should never be permitted to bend over, either for close eye work or in physical exercises, for fear of detachment of the retina.

5. Such precautions are not necessary because they have no effect on myopic eyes.

There is only one common ground on which all groups seem to meet—that progressive myopia is not nearly so prevalent in the United States as in many foreign countries, particularly in Germany and England. Hence, the problem would appear to be much less serious in the United States than elsewhere. However, when a city like New York, having the largest number of sight-saving classes established in any city of the world, finds that 50 per cent of all its sight-saving class children are myopes, the problem would seem to be sufficiently serious to warrant intensive research work so that conclusions as to the educational placement of such children will be to their greatest advantage.

Since ophthalmologists have such widely divergent opinions, it stands to reason that school authorities must be confused as to the candidacy of myopes for sight-saving classes, and that teachers of these classes are at a loss to know what

¹ MacGillivray, A. M. "The Probationary Year in the Sight-Saving School." London, *The Medical Officer*, March 3, 1930. p. 198.

to do from the educational and physical standpoints. This is a case in which ophthalmologists must come to the rescue of educational authorities, but in order to do so they must acquaint themselves with the educational as well as with the ophthalmological aspects of the problem. Not a few ophthalmologists have in the past decried the placement of children in sight-saving classes because they were quite unfamiliar with the conduct of such classes, the material supplied, and the methods of instruction. At a recent meeting of the American Ophthalmological Society the ophthalmological committee of the American Medical Association was appointed to act as a special committee to take under advisement this matter of candidacy of pupils for sight-saving classes.

Because of the uncertainty of school doctors and nurses as to what action they should take, a meeting was called at the University of Chicago in August, 1928, in the name of the Department of Ophthalmology, the Department of Education and the National Society for the Prevention of Blindness, to attempt to formulate some basis of understanding. A course in sight-saving class work was at that time being conducted in the University for students undertaking research work relating to sight-saving class problems and activities. Ophthalmologists, supervisors, and teachers of sight-saving classes were present.

Considerable discussion brought out the fact that the greatest need for help was that of schools and family physicians in determining which children should be referred to ophthalmologists for decision as to final placement. A broad outline was decided upon. This was presented later to the American Academy of Ophthalmology and Otolaryngology at a meeting held in October, 1928, and accepted. It was accepted also by the American Committee on Optics and Visual Physiology at its meeting, June, 1929. The suggested guides, it will be noted, are not for ophthalmologists, but for those whose function it is to recommend ophthalmological care.

School Guides for Finding Potential Sight-Saving Class Pupils and Referring Them for Ophthalmological Opinion

General statement. Children having a visual acuity of 20/70 or less in the better eye after proper refraction. In addition, the following are recommended as potential candidates:

Children in elementary schools having four or more diopters of myopia.

Inactive, subsiding (or regressive) cases, such as interstitial or phlyctenular keratitis, optic neuritis, trachoma, and so forth, in which some irritation may be present, provided the approval of the attending physician is given.

All cases must be considered individually.

Any child who in the opinion of the ophthalmologist would benefit by assignment to a sight-saving class, subject to suggestion for treatment and training by such ophthalmologist, and the acceptance of the educational authorities having charge of such classes.

It is assumed that all the children assigned to sight-saving classes have average normal mentality.

The first item in the above guide deals with visual acuity. This is determined by tests made with the Snellen chart, according to carefully laid down directions and conditions. A study,¹ made in 1925 by the Joint Committee on Health Problems in Education of the National Education Association and revised in 1929 by that body, states that these tests are given by teachers, nurses, school physicians, and others. However, conditions of light, placement of chart, and so forth, vary so greatly, that the results cannot be considered reliable and can serve only as a help in determining the approximate amount of defective vision among school children. From this and from other studies that have been made, a

¹ Wood, T. D. *Conserving the Sight of School Children*. Report of the Joint Committee on Health Problems in Education, No. 6, 1929.

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conservative estimate tends to show that in all probability 80 per cent of the children in elementary schools have normal vision. Of the remaining 20 per cent, over 19 per cent have eye difficulties that can be helped, so that children suffering from them may be brought within the normal group for educational purposes. Of the fraction of one per

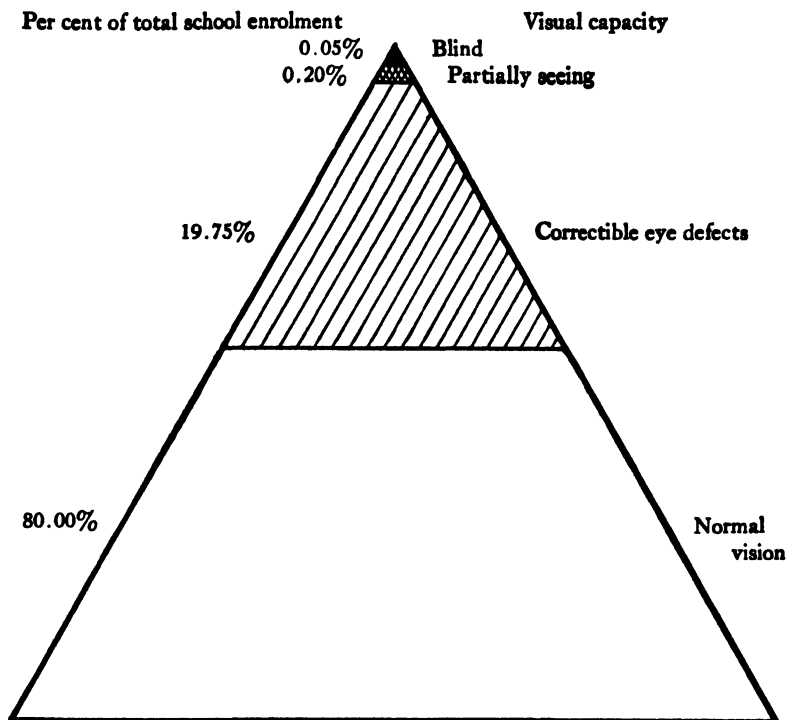


CHART IV. TOTAL SCHOOL ENROLMENT IN THE UNITED STATES CLASSIFIED BY VISUAL CAPACITY

cent remaining, the larger number, although they come within the classification of seeing people, have such serious eye difficulties that they need special care in a sight-saving class; the smaller number, represented by approximately one person in 1,000 of the general population, are blind, and the children in this group should be educated through the sense of touch (Chart IV).

Types of Eye Difficulties Found

There are several types of eye difficulties found among candidates for sight-saving classes: diseases of the eye; refractive errors; muscle imbalance or lack of fusion; scars from disease or from accident; optic nerve atrophy that may result from systemic disease, from trauma, and so forth; and congenital eye difficulties such as congenital cataracts, nystagmus, glaucoma, amblyopia, or general weak sight, which are difficult of classification.

Eye Diseases. Since any part of the eye may become diseased, various manifestations are found among sight-saving class pupils. In a study of 2,932 such pupils, eye diseases are grouped according to the part of the eye affected (Table 2).

TABLE 2

DISTRIBUTION OF SIGHT-SAVING CLASS PUPILS BY TYPE OF EYE DISEASE
AT TIME OF ENTERING CLASS

Type of eye disease	Pupils affected	
	<i>Number</i>	<i>Per cent</i>
Diseases of cornea	411	14 0
Diseases of lens	304	10 4
Diseases of choroid and retina	168	5 7
Malformations	115	3 9
Diseases of optic nerve	103	3 5
Diseases of iris and ciliary body . .	39	1 3
Diseases of conjunctiva or lids . . .	38	1 3
Glaucoma (including buphthalmos) . .	21	0 7
Other	250	8 5
None	1,694	57 8
<i>Total (excluding duplications)</i>	2,932	100 0

Note: Figures are from E. T. Myers' survey data.

Low Visual Acuity. The results of the visual acuity tests, although written for convenience in the form of a fraction, do not indicate fractional values. Indeed, so widely spread was this misconception that the Section on Ophthalmology of the American Medical Association found it necessary to work out a table of definite values (Table 3).

In the so-called normal eye the visual acuity is indicated by 20/20, meaning that at a distance of 20 feet from a

TABLE 3

SNELLEN NOTATION ON VISUAL ACUITY

Distance	Near	Visual efficiency <i>Per cent</i>	Loss of vision <i>Per cent</i>
20/20	14/14	100.0	0.0
20/30	14/21	91.5	8.5
20/40	14/28	83.6	16.4
20/50	14/35	76.5	23.5
20/70	14/49	64.0	36.0
20/100	14/70	48.9	51.1
20/200	14/140	20.0	80.0

properly lighted and properly hung chart the person being tested will be able to read the letters, figures or signs indicated as the 20-foot line. A person having a visual acuity of 20/40 would, at a distance of 20 feet from a chart similarly arranged, be unable to read the line he should see at that distance, but can read a line that he should be able to see were his vision normal at a distance of 40 feet. It must be stressed, however, that this would not indicate a loss of 50 per cent of vision. According to the ophthalmological table quoted above, he would have remaining a visual acuity of 83.6 per cent. Near vision is measured in the same way, the notation being stated in inches.

It will further be noted that the decision as to which children are candidates for sight-saving classes is made according to the vision of the better eye after correction. It is generally conceded that children with a visual acuity of more than 20/70 in the better eye after correction, other things being equal, can undertake their work in the regular grades, although in some instances children with 20/50 are accepted in sight-saving classes.

It is also generally conceded that children with a visual acuity of less than 20/200, except in individual cases, are educationally blind and will use the sense of touch, rather than the sense of sight, as the chief avenue of educational approach.

Children having a visual acuity between 20/70 and 20/200 in the better eye after correction, are considered candidates for sight-saving classes.

Table 4 indicates the visual acuity of 2,590 pupils at the

time of their entrance into sight-saving classes. Since the indications in this table are that the visual acuity of candidates for sight-saving classes will fall between 20/70 and 20/200, the question naturally arises as to the 35 per cent having a visual acuity above 20/70. It has already been stated that there are two groups of children in sight-saving classes, those with progressive eye difficulties likely to grow worse under unfavorable conditions, and those with static eye conditions.

TABLE 4

DISTRIBUTION OF SIGHT-SAVING CLASS PUPILS BY DEGREE OF VISUAL ACUTY OF BETTER EYE AT TIME OF ENTERING CLASS

Visual acuity of better eye (Snellen notations)	Visual efficiency <i>Per cent</i>	No. of pupils	Per cent total pupils
20/20	100 0	46	1.8
20/30	91 5	132	5.1
20/40	83.6	224	8.6
20/50	76 5	457	17.6
20/60	69 9	54	2.1
20/70	64 0	528	20.4
20/80	58 5	35	1.3
20/100	48.9	450	17.4
20/120	40 9	23	0.9
20/150	31.0	28	1.1
20/200	20.0	382	14.7
Less than 20/200	?	231	9.0
<i>Total</i>	—	2,590	100.0

Notes: Figures for sight-saving class pupils are from E. T. Myers' survey data.

Ratings for visual efficiency equivalents are from Compensation Tables accepted by the Section on Ophthalmology of the American Medical Association, but not yet ratified by the A. M. A. (*see* Table 3).

A child is recommended for placement in a sight-saving class, regardless of visual acuity, when an ophthalmological examination indicates a condition resulting either from a refractive error or from a disease that is likely to become worse under unfavorable conditions. Once in the special class it is hoped that by means of the benefits provided there the possibility of progression of the handicap may be reduced to a minimum.

A visual acuity test is a help in determining which children should have further eye attention. It does not, however,

always indicate all the children who should be assigned for further examination. Observation on the part of the teacher is essential. She is forbidden to attempt any diagnosis, but she should be familiar with symptoms that may indicate eye difficulties, such as watery eyes, red eyelids, puckering of the forehead, crossed eyes, inability to see at a distance or near at hand, holding the head to one side, and undue fatigue. Even though the visual acuity test shows such children to have practically normal vision, the teacher should take the responsibility of the next step—sending them to the school nurse—who will, if necessary, refer them to the school physician for further examination.

The most thorough procedure and the one probably the least expensive in the long run, would be for every child to have a careful periodic physical examination, including an examination of the eyes, by those thoroughly competent to make this. If at present this seems impossible, such an examination should be given at least three times during the first eight years of school life—at the time of entrance, during the fourth or fifth school year, and sufficiently in time before the pupil leaves school to correct difficulties where such correction is possible. In addition, the community will save itself and its children much needless work, time and money by caring for the eyes of the preschool child.¹ It is not necessary to wait until a child knows his letters to be able to obtain results from a visual acuity test. The test may be made a game in which the symbol E chart is used, the symbol being thought of as “a funny little animal,” which can turn its legs up or down, to the right or to the left, the direction being indicated by a natural motion of the child’s hand.

Refractive Errors. Refractive errors are caused by the wrong shape of the eye. The eye may be too long from front to back, causing myopia, often called *short sight* because the rays of light focus so far in front of the retina, the receiving station of the eye, that the image of the object seen is vague and indistinct. The eye may be too short from front

¹ Smith, M. G. “Vision Testing and Eye Inspection—An Essential Part of the Pre-School Health Examination.” *Child Health Bulletin*, May, 1930. p. 91.

to back, causing hyperopia, often called *far sight*, because the hyperope can see objects at a distance better than he can see things near at hand. Hyperopia is often misconstrued to mean exceedingly good distance vision. In reality, a hyperope does not see distant objects as well as the person with normal eyes, but he does see them better than he sees things at close range.

The transparent front part of the eye called the cornea, or the lens within the eye, may be irregular in shape, causing astigmatism, a condition in which the rays of light fail to focus at one place, the resulting image being indistinct. In hyperopia and astigmatism the ciliary muscles, those that control accommodation, have to work very hard in an attempt to bring the object seen to the right focus in order to give clear images, and unless these difficulties can be corrected by lenses, eye fatigue results. Where they can be fully corrected the child is usually able to work with normally seeing children. In cases where they can not be corrected, special educational helps become necessary.

All normally seeing children are born hyperopic. The eye does not attain its full growth until the child is about seven years old; hence, children entering school are considered to have normal sight if they are slightly hyperopic. In the study just cited of 2,932 sight-saving class pupils, errors of refraction were found as indicated in Table 5.

Muscular Imbalance and Lack of Fusion. Movement of the eyes is made possible by external muscles, six for each eye, four recti muscles and two oblique. These muscles work in groups and by cooperation the eye can move up and down, to the right or left, and obliquely, provided the muscles are evenly balanced. If one muscle is weaker or shorter than its fellow, it will be seen that the two eyes will not act in unison, one becoming the focusing eye and the other turning in or out, or up or down, in relation to the focus. This condition is known as crossed eye or strabismus. In very early infancy the muscles may not work together, or there may not be the power to fuse images. It is not uncommon to see a very young child with eyes acting inde-

pendently of each other. If after the first year the eyes still appear to cross, correction should be made. The earlier this is done the greater the chance of correction. This correction is sometimes effected by covering the stronger eye and making the weaker eye work; sometimes by glasses that are necessary to relieve focusing effort. If the power of fusion is not attained by the time the child is about seven, little can be hoped for. An operation may aid by straightening the crossed eyes, but it cannot bring back the sight that may have been lost because of the inactivity of the weaker eye.

TABLE 5

DISTRIBUTION OF SIGHT-SAVING CLASS PUPILS BY TYPE OF REFRACTIVE ERROR AT TIME OF ENTERING CLASS

Refractive error	Pupils affected	
	<i>Number</i>	<i>Per cent</i>
Hyperopia.....	226	7 7
Myopia, progressive	233	8 0
Myopia, unspecified	388	13 2
Hyperopic astigmatism	487	16 6
Myopic astigmatism, progressive	137	4 7
Myopic astigmatism, unspecified	364	12 4
Mixed astigmatism	67	2 3
Astigmatism, type unspecified	37	1 3
Other (combinations and indefinite terms)	58	2 0
None	935	31 8
<i>Total</i>	2,932	100 0
<i>Total: Hyperopia and hyperopic astigmatism.</i>		24 3
<i>Total: Myopia and myopic astigmatism</i>		38 3
<i>Total: Astigmatism, all forms</i>		37 3
<i>Total: Any error of refraction.</i>		68 2

Note: Figures are from E. T. Myers' survey data.

Since the candidacy of pupils for sight-saving classes is determined by the condition of the better eye, crossed eye or strabismus is not necessarily a determining factor. It is, however, often connected with the other eye difficulties, and the condition is seen in sight-saving classes frequently enough to warrant very careful consideration. In the group of 2,932 pupils studied, the frequency of strabismus will be noted in Table 6.

TABLE 6

DISTRIBUTION OF SIGHT-SAVING CLASS PUPILS BY TYPE OF MUSCLE DISTURBANCE AT TIME OF ENTERING CLASS

Type of muscle disturbance	Pupils affected	
	Number	Per cent
Nystagmus.....	388	13.3
Strabismus or squint.....	206	7.0
Nystagmus and strabismus.....	61	2.1
Heterophoria.....	4	0.1
Paresis.....	2	0.1
Nystagmus and paresis.....	1	0.0
None.....	2,270	77.4
<i>Total</i>	2,932	100.0

Note: Figures are from E. T. Myers' survey data.

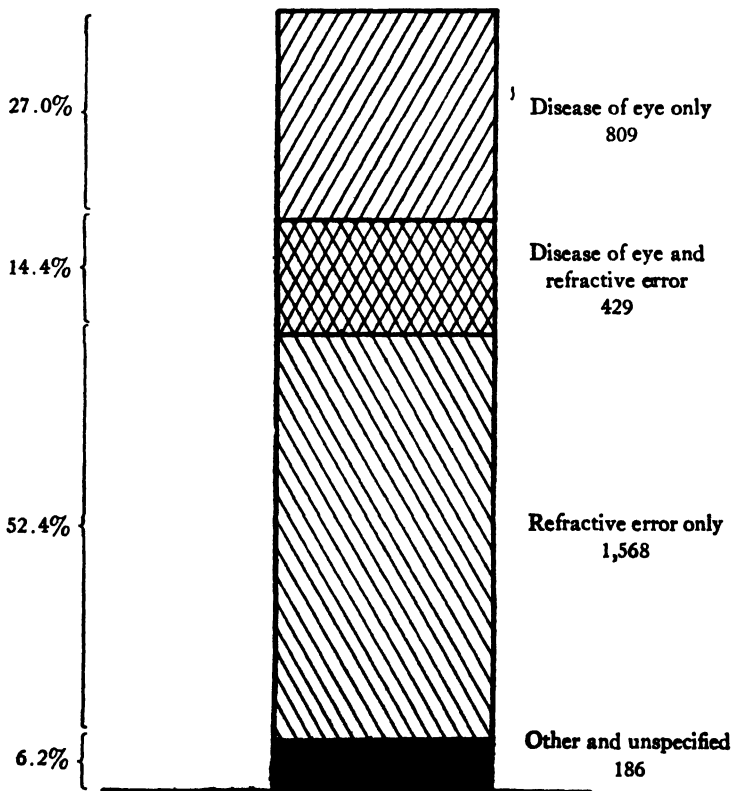


CHART V. EYE CONDITIONS FOUND AMONG SIGHT-SAVING CLASS PUPILS AT TIME OF ENTERING SIGHT-SAVING CLASS

A careful consideration of the subject of eye difficulties will show that children may be suffering not only from one, but from several. The distribution in these groups is indicated on Chart V.

Slight eye difficulties in the preschool child often capable of correction or other help may, if uncared for, develop into serious educational handicaps. A study recently made of the eye conditions of approximately 1,000 preschool children shows a comparatively high incidence of abnormal conditions (Chart VI).

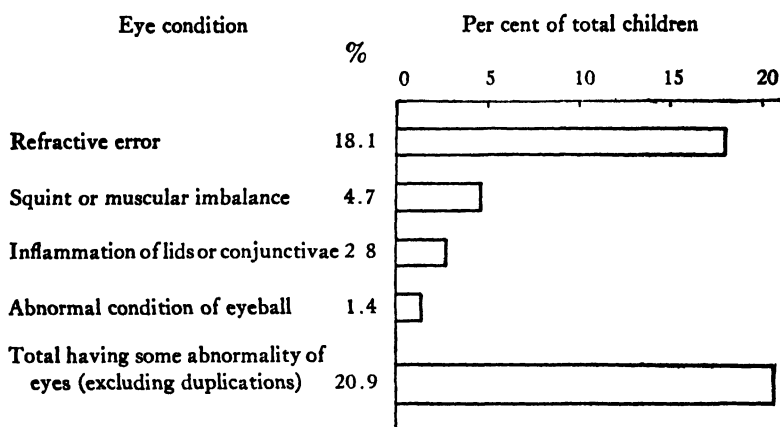


CHART VI. DISTRIBUTION OF PRESCHOOL CHILDREN HAVING SOME ABNORMALITY OF THE EYE BY TYPE OF EYE CONDITION FOUND

Note: Figures in this chart are from Wood, T. D., *The Vision of Preschool Children—An Analytical Study of 988 Children*. New York, Nat. Soc. for the Prevention of Blindness, Publ. No. 66, 1930.

Ophthalmological Care

If the decision of the ophthalmologist, whether he be a school ophthalmologist or a private physician, is that a child should be placed in a sight-saving class, the work is just begun. Educational authorities must necessarily take care of the routine of placement, but the ophthalmologist must see to it that conditions are such that the sight is protected. If the eye is diseased, arrangements must be made for treatment. If there are refractive errors that can be

helped by glasses, they must be provided, at the expense of the parent if this is possible, if not, by some social agency.

The ophthalmologist should keep a record of all eye conditions of children in sight-saving classes, so that checking may be done at specified times to discover whether the conditions are favorable or unfavorable and to note what extra care, if any, is needed. The ophthalmologist should prepare a record for the teacher in charge of the sight-saving class so that she may know the difficulty from which the child is suffering and give the greatest possible protection by adapting curriculum and material to the child's needs. The ophthalmologist should also visit the classroom from time to time to observe the child and to give assistance to the teacher.

Communities have various ways of providing ophthalmological care. Of 336 classes reporting: 34.6 per cent have ophthalmologists employed by the board of education; in 10.7 per cent they are employed by the board of health; in 1.8 per cent ophthalmologists give voluntary service; in 2.7 per cent it is supplied by unofficial organizations; but 50.2 per cent of these classes have no regular ophthalmological service.

For this service, probably the most important in all sight-saving class work, no arrangements are made for 169 classes; 15 classes depend either upon oculists giving voluntary service, or upon unofficial organizations. In the pioneer days of the work, and even in places where classes are being established for the first time, it may be necessary to depend upon unofficial organizations or volunteer help; but since the eye condition affects educational processes, the responsibility lies with the board of health or the board of education, whichever organization is responsible for the health of the school child. The service of unofficial organizations in providing ocular care in the promotion of sight-saving classes is excellent, but it is not their function to continue the work after classes are well established. Ophthalmologists are most generous in giving their skill and time, but it can hardly be expected that they can continue to do this for any length of

time or for any large number of pupils. Some cities provide eye clinics. In New York City the health of school children is under the direction of the board of health. This body supplies physicians and nurses, and the board of education supplies rooms in school buildings for eleven eye clinics distributed throughout the five boroughs.

In cases where such eye clinics are separate from general clinics, arrangements must be made for general health examinations and for treatment of those systemic diseases that are the cause of many eye difficulties.

The method of obtaining ophthalmological care for sight-saving classes has been discussed. The type of service rendered is equally important.

Periodic examinations of the eyes are made in 25.3 per cent of the 336 classes reporting; reexamination, as required, in 25.6 per cent; visits of ophthalmologists to classes in 22.9 per cent; supervision of equipment and technique of classroom as related to eye work in 14.3 per cent; consultation with teacher in 28.3 per cent.

If ophthalmological service is to be of the greatest benefit, it is necessary to have periodic eye examinations. These are for determining the eye condition and recommending treatment or change in glasses where such may be necessary. There is, however, another reason for this systematic care. By checking new records with former ones, the ophthalmologist is able to discover whether conditions are improving, are static, or are becoming worse. Upon such decision must be based his recommendations for the education of the individual child.

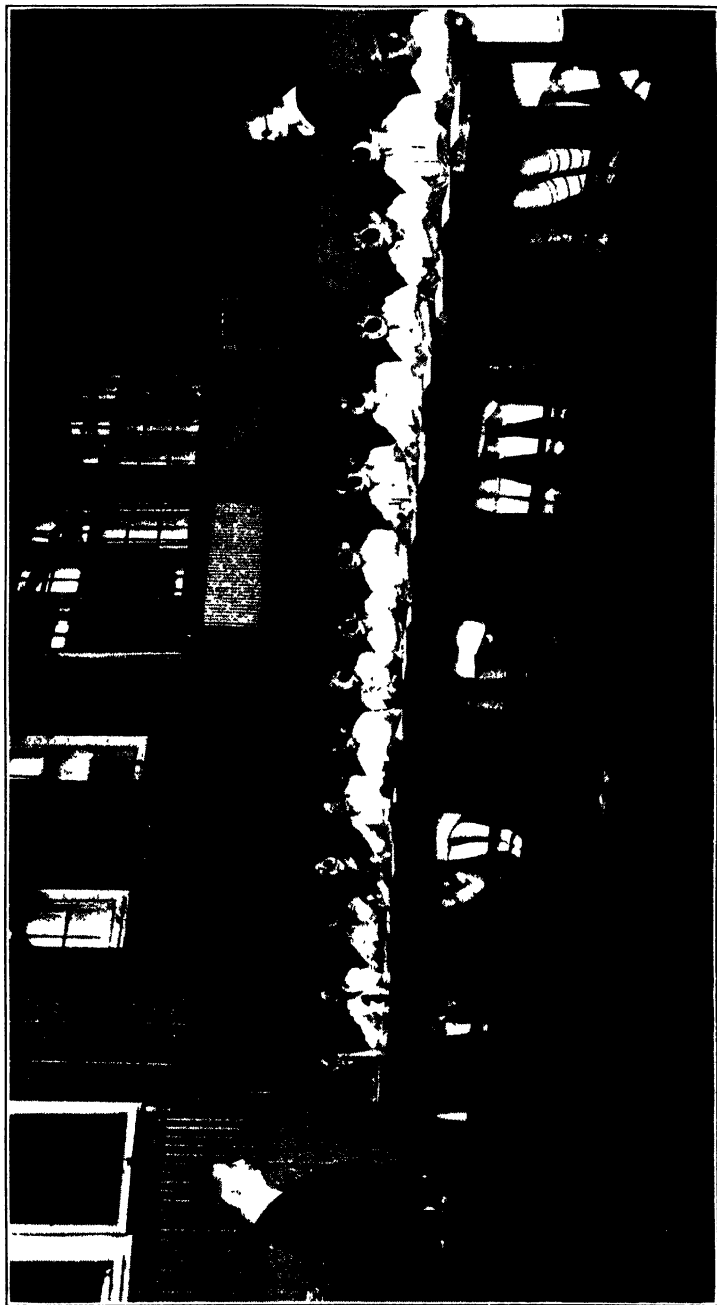
In cases of corneal scars, periodic examinations may possibly be necessary only at fairly long intervals, but in cases of progressive eye difficulties, frequent examinations are essential. In cases where examinations are given regularly, usually arrangements are made for all pupils to be examined at least once a year, and children requiring more frequent examinations are notified when they are to return for reexamination. In 293 classes reporting on the regularity and frequency of eye examinations, 48.8 per cent have rou-

tine examinations at intervals varying from three months to one year; 51.2 per cent have no routine examinations. In some instances, once children have been placed in sight-saving classes they receive no further ophthalmological care, unless an acute condition arises. This is a situation that should be radically changed.

The preceding discussions have dealt with ophthalmological care for sight-saving classes as such. Of 326 classes reporting methods of providing individual care are as follows: in 46 per cent boards of education or boards of health provide some ophthalmological service, chiefly to the indigent child; in 54 per cent, arrangements are the responsibility of parents or social agencies.

It has been noted that if comparisons are to be made of eye conditions from time to time, records must be kept, and if teachers are to accomplish the best results with sight-saving class pupils, data concerning their eye conditions must be available for reference. Of the 336 classes reporting, 82.4 per cent have printed or mimeographed forms. In 66.3 per cent, teachers are supplied with the original record or with a duplicate; in 1.2 per cent, teachers have access to records which are filed elsewhere; in 32.5 per cent, they receive some general information regarding the eye condition.

Some physicians still believe that education as such is something quite apart from the physical condition of the child and that the less the teacher knows about the physical condition the more time and energy she can devote to academic teaching. Were academic teaching an end in itself, this position might be tenable, but the sooner it is appreciated that teaching is only a means to help bring about desired results, and that such results are largely dependent upon the physical ability of the child to use the teaching service provided, the more satisfactory they will be. Much may be said for the physician who feels he cannot take the time to explain terms unintelligible to the teacher. In the case of teachers trained to undertake sight-saving class work he does not have to do this, since they have learned to speak his lan-



Courtesy of Minneapolis Public Schools

GROUP VISION TEST IN A MINNEAPOLIS PUBLIC SCHOOL, DEPARTMENT OF HYGIENE

guage with a fair amount of fluency. There may perhaps remain a trace of the old tradition of keeping medical knowledge a mystery. Physicians should realize, and in the great majority of cases they do realize, that without knowing the eye difficulty by which a child is handicapped, a sight-saving class teacher, even with the very best of intentions, may do or permit the child to do, the very things that may aggravate the trouble. In this way the chief object for which sight-saving classes were originally intended, that of saving sight, may not only fail to be attained, but the child may be actually harmed.

It will be concluded that the importance of providing for special ophthalmological care for children in sight-saving classes is, in general, recognized; that in a comparatively large number of the schools reporting, the care is fairly adequate and well systematized; that for other classes much greater emphasis must be placed upon such care than is at present being done. Sight is much more important than education, and it is useless to expect the best results from education unless everything possible is done to keep the child physically capable of taking advantage of the opportunities offered.

EDUCATION

Organization

Community Need. In considering the organization of a sight-saving class in any community the first questions to be decided are whether there are children in that community needing this special type of education and whether the number is sufficient to warrant the establishment of a class. Since, as has been stated, the accepted estimate is one child in 500 of the school population, it is quite possible to make a rough estimate of the number.

In many cities an actual survey has been made of the health conditions of all pupils, sometimes for general health, at other times for specific conditions such as oral hygiene. It may be possible to have a survey made especially for eye

conditions, thus insuring the finding of all children who need any eye help and in addition those who, because of serious eye difficulties that cannot be remedied, need the advantages of a sight-saving class.

In communities having an efficient system of health care for school children, each medical inspector or school nurse may go over the records already available and select for further examination all children whose records indicate serious eye trouble. If records are not available, school nurses, principals and teachers may be requested to send in the names of children appearing to have eye difficulties so that a special examination may be given them.

It is possible that some children will not be discovered at first by any of these methods but when a beginning has been made and the advantages of sight-saving classes are understood and appreciated in a community, the difficulty of finding candidates is greatly lessened.

Selection and Location of School. When the need for a class has been demonstrated, the next question is the selection of a school building.

Since the number of children needing the advantages of a sight-saving class is too small to warrant the establishment of classes in all schools, one school must often serve a group, sometimes consisting of a whole district, at other times of an entire community. The first consideration, therefore, is the location of such a school. A centrally located building that can be reached by car or bus lines usually offers the greatest advantages so far as transportation is concerned.

Grades Available for Cooperative Work. If the cooperative plan is to be used, that of having the children take all activities not requiring the close use of their eyes with regular grade children, it is essential for the success of the sight-saving class that the school selected cover the grades represented. If the sight-saving class pupils are in elementary school grades, the class should be placed in an elementary school. If the pupils are from junior high schools, the class should be placed in a junior high school.

In the 350 classes already established this matter has

been taken into careful consideration in the majority of cases and, on the whole, the classes are well placed from this viewpoint. There are occasional instances, however, where an elementary class has been placed in a junior or even in a senior high school building because a room was available. There are other instances in which sight-saving classes having seventh, eighth, and ninth grade pupils as well as pupils in the lower grades, have been placed in elementary schools, to the advantage of younger pupils but to the disadvantage of the older ones who must either travel some distance to the nearest junior high school, thus losing much time and energy, or who must carry on their work without the benefit of contact with normally seeing companions of their own age. In instances where this has been done, it has been largely a matter of expediency, the disadvantages seeming to be less than those that would arise from not having a class. As more classes are formed in a community, it is often possible to make better arrangements for grouping, so that all pupils may have the value of contact with regular grades.

In a few instances, fortunately rare, sight-saving classes have been placed in special schools for the mentally deficient. This action has not only deprived these children of contact with regular grade pupils, but has intensified the impression, altogether too common among the general public, that any type of handicap is concomitant with mental subnormality.

Lighting, Decoration, and Equipment. It is evident that if a modern building can be selected there will probably be little necessity for remodeling, since decoration and lighting of most of the new school buildings much more nearly approximate the ideal for normally seeing children than in the past. As far as these particular conditions are concerned, what is ideal for normally seeing children is likewise ideal for the partially seeing. Ideal conditions to be looked for are somewhat as follows:

Natural light should be unilateral, to the left of the pupils, the glass area at least one-fifth, preferably one-fourth, of the floor area. Since the best light comes

from the top of the window, the glass area should reach within six inches of the ceiling and the bastions between windows be as narrow as possible to prevent shadows. In order to prevent glare in the eyes of the children and on blackboards, windows should not be placed nearer to the front of the room than seven feet. Surroundings likely to cause glare, such as whitewashed buildings and glass roofs, should be avoided. East or west exposures should be selected, since these give a maximum of light with a minimum of glare. The natural light should be controlled by two buff-colored translucent shades, placed on rollers near the center of the window so that one may be pulled up and the other down. Shades should be wide enough to avoid streaks of light at the side, and great care should be taken to see that there is no space between the rollers.

Artificial light should be adequate, well distributed and diffused and without glare. Twelve-foot candles of light on each working plane are recommended. A room of the ordinary size, 24 feet by 32 feet, should be equipped with six luminaires hung approximately 6 feet from the walls, 12 feet apart crosswise of the room and 10 feet apart lengthwise. The two lengthwise rows should be on separate switches, since the light from the row nearest the window will not be required as often as that on the far side of the room. Totally enclosing globes of daylight glass having a low brilliance are recommended for classrooms, since the resultant illumination blends well with daylight and the maintenance is simple. Each such luminaire should be hung at approximately $1\frac{1}{2}$ feet from the ceiling, so as to give the widest possible distribution of light, and should contain a 300-watt clear lamp.

The color of walls is determined somewhat by the climate. In temperate zones, light buff walls with white or cream ceilings have proved most satisfactory; they are not only cheerful but, what is of far greater importance, have an excellent reflecting value. A neutral tone

of woodwork is suggested. In order to reduce glare to a minimum, all surfaces, walls, woodwork and ceilings should be in flat finish.

The room should be equipped with a teacher's desk and chair and with adjustable, comfortable, hygienic seats and desks that lift to an angle, all in dull finish.

Blackboards should be of good slate and should be kept in condition by frequent hygienic cleaning and by refinishing when necessary. Blackboards in three parts, each of which may be pushed up or down, make it possible for the pupils to keep work on a level with their eyes.

The arrangements thus far mentioned as necessary for sight-saving class pupils, differ in nowise from those for the normally seeing. It will be necessary to add closets large enough to hold material of greater proportions than that used in regular grades, a long table and chairs for handwork, and, in classrooms intended for young children, kindergarten tables and chairs, a sand table for project work and one or two easels.

Special Equipment. a. Books. In addition to the decoration and furnishings of the classroom, certain other special equipment must be provided.

In the majority of cases regular school books are, or should be, printed in at least 10-point type. For sight-saving class children books are printed in 24-point type. Not only is the size greater but the spacing between letters, words, and lines, is given special attention. Letters are as clear as possible and are printed with as few serifs and unnecessary lines of any description as possible. Books are printed in black ink on light buff paper because of the greater legibility and eye case.

With the variety of books used not only in different states and cities, but in different schools of the same city in regular grades, it will readily be seen that, because of the small demand for sight-saving class books, it would be prohibitive from the point of view of expense to print all school

books in 24-point type. Consequently children in sight-saving classes often use books different from those provided for children in the grades with whom they recite orally. This is not a loss but an asset, since the contents of two books instead of one are made available to both groups for oral discussion. Through the influence of sight-saving classes, the print and indeed the whole make-up of school books, especially for younger children, have been greatly improved, so that some books and other material intended for normally seeing children may be used in the lower grades of sight-saving classes. There is, however, a great dearth of material in 24-point type for upper grade pupils, especially for those in junior and senior high schools.

The study which resulted in the selection of 24-point type for use in books for sight-saving classes was made with a limited number of pupils. Tests were made with types ranging from 18-point to 36-point. This investigation showed that, with the children studied, reading efficiency diminished and evidences of eye fatigue increased as the size of the type varied in either direction from 24-point. It is possible that further investigation would give different results, and, also, it might develop that no single size or style of type is equally satisfactory for pupils suffering from different kinds and degrees of eye difficulty.

If further investigation should show that for many sight-saving class pupils 18-point type would be quite as satisfactory as 24-point, it will be of great help in solving the problem of having a sufficient number of books, since many modern libraries are now specializing in "books for tired eyes." The demand for these from a much wider group of people than the limited number in sight-saving classes would appreciably lower the cost of material, and remove one of the chief objections to the establishment of sight-saving classes.

Since reading in sight-saving classes is encouraged from the standpoint of use rather than of pleasure, the necessity is not so great for such a wide range of literature as is provided for the normally seeing. However, more textbooks,

dictionaries, and so forth, in a satisfactory type would greatly facilitate and simplify the work not only of pupils, but of teachers who are now overburdened by the preparation, by hand, of a very large amount of the material used in sight-saving classes.

b. Writing Materials. In sight-saving classes writing is reduced to a minimum. What is done is in large letters and figures on large sheets of paper, chiefly manila, with heavily leaded pencil or special pens and ink, and with yellow or white (preferably a light-tone yellow) chalk on the blackboard. In practically all sight-saving classes the supply of writing materials is fairly adequate. There is still a feeling in some classes that it is better to save paper than eyes, in which case children are required to write with words and lines too close together. This is not so noticeable in handwritten material as in paper used for the typewriter.

c. Typewriters. Since the aim in sight-saving classes is to avoid unnecessary eye use, typewriting is taught as early as seems expedient, so that a mastery of the machine may be gained and much of the work prepared directly on the typewriter. Three typewriter companies manufacture machines especially adapted for sight-saving class work. The type of these is not quite as large as that in sight-saving class books but it is a form that can be read without fatigue by the majority. Many classes are not yet supplied with sight-saving class typewriters and several have no typewriters, so that an opportunity to accomplish much without fatigue is daily being lost. From the beginning of the teaching of typewriting in sight-saving classes, pupils are imbued with the idea that typewriting is to be used as a medium of written expression in order to reduce eye use and the possibility of fatigue, not as a vocation.

When the mechanics of typewriting are mastered, it is necessary now and then to use copy, although the aim is to have the pupil prepare as much as possible of his original material directly on the typewriter. If copy is used, it should be in clear large type and should be so placed that no eye effort is necessary to see it. Copy should be directly in front

of the pupil since copy at the side, or laid flat on the desk, may be a cause of eye fatigue. Several sight-saving class supervisors and teachers have devised good copyholders which have been made in the manual training departments of their schools. Experimental work is necessary to develop a copyholder that will meet all requirements.

Although a number of cities have worked out excellent methods of teaching typewriting and are rigid in their adherence to ideals, typewriting on the whole is the poorest taught subject in sight-saving classes. An accurate touch system is all too seldom used, and the real use of the typewriter in sight-saving classes—that of reducing eye use, is very often entirely forgotten. The many must follow the example of the few in making the mastery of the typewriter an asset and not an added handicap to every sight-saving class pupil.¹

d. Maps. The usual maps found in regular grades have no place in the sight-saving classroom since many of the pupils cannot, and others should not, read names in small print. Globes, wall maps and seat maps, all without detail, are substituted and with such aids the sight-saving class pupil is able to pursue his history or geography lesson without eye fatigue. The manufacturers of maps have been most cooperative in placing upon the market excellent maps, not only for sight-saving class use but for children in regular grades. It is noteworthy that maps prepared by sight-saving class teachers are in the majority of cases one of the best features of the equipment.

e. Pictures. There is no reason why children in sight-saving classes should be deprived of illustrative material. Large, clear pictures without detail form a part of the sight-saving class equipment and, used with discretion, add greatly to the interest and development of the pupil. The tendency in many classes, however, is to use too many pictures at a time and to select pictures with too much detail.

¹Lawes, E. "Methods of Teaching Sight-Saving Classes," *Nat. Soc. for the Prevention of Blindness*, Apr. 1926, pp. 26-33.—"Typing in Sight-Saving Classes," *Sight Saving Class Exchange*, June, 1930. Ryan, L. F. "Typewriting in Sight-Saving Classes," *Sight-Saving Class Exchange*, Sept. 1930. p. 4.

f. Material for Motivated Handwork. Material for motivated handwork is found in sight-saving classes as in regular grades, the difference being that in the sight-saving class no form of handwork is included that may cause any discomfort to children handicapped by seriously defective vision. As in the regular grades, no type of handwork should be provided for sight-saving class children that cannot justify its right as a part of the educational program. Busy work as such is no longer tolerated in either group. It was to be expected, in the pioneer days of sight-saving classes, that much of the work should be similar to that found advantageous for blind children. Forms of handwork quite possible for children who had no sight to endanger, found their way into the sight-saving class, to the detriment of sight-saving class pupils. The right of any handwork to be included in the program of these classes must be determined by certain attributes: it must be an eye rest; it must be motivated; it must have some bearing on the academic work; it must help to satisfy the creative instinct; it must arouse in the pupil such an interest that at home he will be happy to substitute it for reading and other activities requiring close use of the eyes. Although the more advanced sight-saving classes have recognized for some time the necessity for considering all of these attributes, a large number of classes are still lamentably lacking in the proper material for and the conduct of handwork. It is distressing to see chair caning, an infinite variety of basket work, intensive weaving, and even sewing, still being carried on in some sight-saving classes.

Every part of the equipment of the class should be selected with the idea in mind that the education offered is to be as nearly as possible like that of the regular grades as is consistent with the necessity for a minimum of eye work.

In a few sight-saving classes conditions are ideal, not only where it has been possible to place the classes in new buildings, but where classrooms in old buildings have been re-equipped. Many rooms, however, are too small, are badly lighted, both naturally and artificially, and are very poorly equipped. Again it is a question whether the advantages of

having a class, even if ideal conditions do not obtain, are not greater than having no class. The difficulty lies in the fact that in many instances the aim of the classes is so little understood that any arrangements are considered good enough. In other cases, although at first it is realized that the conditions do not meet requirements, they gradually become accepted as the lesser of two evils and are taken for granted without any effort being made to better them or to take advantage of new opportunities as they arise.

Conditions cannot always be changed and teachers must often make the best of those that exist. This cannot be construed as failure. Failure lies in losing sight of the ideal. The most reprehensible situation is where excellent environment and equipment are provided but there is a failure to make use of them. One of the most common examples of this is in the matter of properly diffusing natural light. In an east room shades may be properly adjusted to meet the conditions of the early part of the morning, and no further attention given to them. Thus, instead of having the advantage of a sight-saving classroom, children are tiring their eyes by attempting to work under altogether too little light, a condition that could be easily remedied by proper adjustment of the shades to meet the changing conditions of light throughout the day.

Methods of Conducting Classes

The first sight-saving class established in America, that in Roxbury, Massachusetts, was looked upon as a step-child of the educational system. It was at first housed in a room in an office building, but, as this proved in every way unsatisfactory, it was moved to a room in a small, abandoned school building. Since it was not really considered one of the educational family, the children in the class had no contact with other children in the school system; in other words, it was a segregated group.

There were certain advantages in this method of conducting a class of which the work was so new, the experiment

so untried. The teacher, having the children under her care during all the school hours, was at liberty to develop ways and means without consulting the program of other classes. It was essentially an experimental class in which results had to be worked out by the trial and error method.

The second class in the United States, that in Cleveland, developed almost from the beginning along different lines. Arrangements were made by which the children might be with the normally seeing group as much as possible. Thus a program very gradually was developed by which the members of the class took all work requiring close use of the eyes in the special room, and oral work, physical exercises—as far as possible—play periods, rote singing, and so forth, with normally seeing children of their own mental age. This type of arrangement became known as the *cooperative* or *coordinating* plan, in contradistinction to the method of segregation. There were many obstacles to be overcome in carrying out such a plan; cooperation of school principals and regular grade teachers was absolutely necessary to its success. In many instances this was difficult to obtain, first, because the work was so new that there was little understanding of its aims; and, second, because it was difficult for a teacher to understand why, when a child had been taken out of her class because of a physical handicap, he should be returned there for part of his work.

It soon became apparent that it would be necessary to educate the educational authorities, as well as the children.

The two methods, known as the segregated and the cooperative, developed side by side. New classes established in Massachusetts naturally followed the method initiated there. New classes in Ohio used the cooperative plan. As other states established classes, they in turn followed whichever method seemed to meet their particular views. As, however, socialization began to influence all education to a greater degree, the cooperative method gained the ascendancy. Of 344 classes reporting for this survey, 83.8 per cent use the cooperative plan; in 5.2 per cent a partly cooperative plan is in operation; in 11 per cent the children are segregated.

Gradually, modifications began to be made in both methods. In some of the classes using the plan of segregation a few children began to be sent into the regular grade for possibly one subject of the curriculum, and differentiations began to be noted in the cooperative classes. The general plan in these is to register the children in the special class and to send them into the regular grade for work that does not require close use of the eyes. With few exceptions, this is the plan now used by classes that are not segregated.

St. Louis is using a modification by which, instead of registering the children in the special class, they are registered in the regular grade and go into the sight-saving class for their special eye work.¹ The difference is chiefly a matter of administration. In states having a per capita appropriation for this special work, the administrative details are simplified by having the children registered in the special group. In the actual working out of the plans there is very little difference, since the close eye work is in both cases taken in the special class and the other work in the regular grade.

The St. Louis plan offers two advantages: If the child is registered as a student of the regular grade, he is more likely to be looked upon by his companions as one of them; the second advantage is the position it gives to the teacher of the special class. The teacher of the regular grade is glad to be relieved of close eye work with these children; she is not trained to do this, nor has she the time to give individual attention. Hence, the teacher of the sight-saving class is relieving her of a burden, thus making it possible for her to devote her time proportionately to the other children. This fosters a spirit of cooperation, so necessary to the successful carrying out of the cooperative work.

Those who favor the St. Louis plan feel that it is unwise for a growing child to be under the influence of one teacher for the full period of the elementary school life. This objection, however, has no real foundation in fact. If

¹ The so-called *St. Louis plan* was tried in a number of cities prior to the establishment of sight-saving classes in St. Louis, but was abandoned in nearly all of them because of administrative difficulties.

the children are registered as members of a special class, they have the influence of all the teachers into whose rooms they go for oral work. If on the other hand they are registered in a regular grade, they spend approximately the same amount of time in the special class as do children in classes conducted according to the other plan, and in this way are under the influence of the sight-saving class teacher an equal amount of time.

The registering of children in a special class has one distinct advantage, besides that of making for easier administration. When a child is placed in a sight-saving class he may be retarded in those subjects that require close use of the eyes, such as reading, writing, spelling, and so forth, because he has had no educational media to make these intelligible to him. He may have been rated as a second grade pupil, although in history, geography, mental arithmetic, current events, and similar subjects requiring memory or reasoning power, he may be far in advance of his second grade companions. To hold such a child in a second grade is to cause him to lose interest and become discouraged. Yet, unless the school is conducted upon some laboratory system, such as the Dalton or the Winnetka plans, it will be practically impossible for him to take each subject in the grade for which he is fitted. If he is registered in the special class, he may take those subjects requiring close eye use as a second grade pupil, but he may be sent for oral work to any grade of which he is able to undertake the activities, the special grade teacher spending her efforts in bringing him up to grade in those subjects in which he is retarded. Since in the special class he is provided with the material that was lacking in the regular grade, he can probably make rapid progress in subjects requiring close use of the eyes and soon be able to take his rightful place. The humiliation of being placed in a second grade may not only cause discouragement, but may develop inferiority complexes that will add to his existing handicap of poor vision.

The most noteworthy difference from the generally accepted cooperative plan is found in the city of Cleveland.

As has been stated, there are two types of children attending sight-saving classes, those with eye conditions likely to grow worse under unfavorable conditions, and those with static eye difficulties. It will readily be seen that children with static eye difficulties may be permitted much use of the eyes that might prove unwise for children with progressive eye troubles.

Although individual instruction is given in these classes, it is difficult to allow one group of children certain privileges without extending them to the other groups. A child with static eye conditions may be able to read books in much smaller type than would be permitted for myopes, but the temptation for myopes to use such books would be exceedingly great. Cleveland has solved this problem by placing myopes in certain of its sight-saving classes wherever possible, and static cases in others. Such a procedure is, of course, possible only where a sufficient number of classes permits of this differentiation, and also where the question of transportation makes the arrangement feasible.

Number of Pupils to a Class

It will readily be seen that since the estimate of children needing this specialized education is one to 500 of the school population, there is no warrant, even in large communities, for establishing sight-saving classes in each school. In consequence, a teacher undertaking this work in almost any community must teach more than one grade. In addition to the number of grades, different types of eye difficulty will be encountered, so that each child will have to be considered individually.

It is the consensus of opinion that no sight-saving class teacher should be required to teach more than four grades; that if but four grades are represented, she may care for a maximum of sixteen children, although a smaller number is not only desirable but sometimes a necessity. In small communities, however, where but one class is established, it is possible that every grade, at least of the elementary school, may be represented. In such cases the number of

pupils assigned to the teacher should be reduced proportionately. Unfortunately, this practice has not been universally followed. In some instances, to bridge over the time when there are too many pupils for one class and not enough for two classes, an assistant has been appointed.

In addition, especially at the time of the establishment of a class in a new community, children may enter any grade and the teacher has the extra responsibility for breaking down resistances that in all probability would not have been built up if all sight-saving class children entered first or pre-first classes. The onset of eye difficulties may occur at any time; thus, a child in the fifth grade may have his sight impaired by accident or disease, or he may be suffering from a slowly developing eye difficulty that may not interfere with his work for some time. The most common reason for children entering grades other than the first is that eye difficulties are frequently not discovered until children suffering from them enter grades which require considerable eye work. In the lower grades large size type is often used, and it may be only when the child is expected to use the smaller type of the books in higher grades that his difficulty becomes apparent.

A study of 3,035 children in sight-saving classes gives an indication of the wide range of grades which children enter (Table 7).

A survey made in 1930 of all sight-saving classes shows that many teachers have a very complicated program.¹

Age Grouping

Age grouping at the time of entering a sight-saving class is particularly interesting in showing the rapid increase in numbers up to a particular age. The figures of Table 8 bring out a much discussed point: What is the average age of children at which a peak is reached by eye difficulties of such seriousness as to warrant their placement in sight-saving

¹ For detailed information, consult Appendix, Table B: Cross Classification of Sight-Saving Classes by Number of Grades Taught and Number of Pupils Enrolled.

TABLE 7

SIGHT-SAVING CLASS PUPILS CLASSIFIED BY GRADE AT TIME OF ENTERING SIGHT-SAVING CLASSES

Grade at time of entering class	No. of pupils	Per cent of total pupils	<i>Cumulative percentages</i>
Kindergarten.....	32	1.1	1.1
Grade 1.....	732	24.1	25.2
Grade 2.....	652	21.5	46.7
Grade 3.....	588	19.4	66.1
Grade 4.....	440	14.5	80.6
Grade 5.....	276	9.1	89.7
Grade 6.....	178	5.9	95.6
Grade 7.....	82	2.7	98.3
Grade 8.....	29	1.0	99.3
Grade 9.....	13	0.4	99.7
Grade 10.....	7	0.2	99.9
Grade 11.....	4	0.1	100.0
Grade 12.....	2	0.0	100.0
<i>Total</i>	3,035	100.0	100.0

Note: Figures are from E. T. Myers' survey data.

classes? It is contended that in the kindergarten and first grades the children use their eyes very little for close work; that by the time children reach the third grade, there is considerably more eye work. In this table it is interesting to note that the peak is reached at eight years, after which there is a steady decline. However, it must be borne in mind that in many cases no provision is made for pupils in the higher grades and that, without complete data from which to make a full analysis, only tendencies can be shown.

Table 8 deals with the ages of children at the time they entered sight-saving classes.

A survey of ages of pupils in sight-saving classes offers quite diverse aspects. From a study of 3,061 pupils it was found that the figures are highest for the age of thirteen, and rapidly decrease thereafter. Again, without data for a detailed analysis, no conclusions can be drawn. In addition to the fact already mentioned that facilities of sight-saving classes are often not provided for older pupils, it must be remembered that pupils entering the classes are sometimes greatly retarded in their school work, particularly after

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TABLE 8

DISTRIBUTION OF SIGHT-SAVING CLASS PUPILS BY AGE AT TIME
OF ENTERING CLASS

Years of age at time of entering class	No. of Pupils	Per cent of total pupils
5.....	35	1.2
6.....	332	11.1
7.....	461	15.2
8.....	520	17.2
9.....	446	14.7
10.....	410	13.5
11.....	325	10.7
12.....	201	6.6
13.....	158	5.2
14.....	85	2.8
15.....	33	1.1
16.....	15	0.5
Over 16.....	6	0.2
All ages.....	3,027	100.0

Note: Figures are from E. T. Myers' survey data.

reaching grades in which a good deal of close eye use is required; hence, pupils of thirteen years of age may still be unable to accomplish work beyond the third or fourth grade.

Sex Distribution

There has been considerable question as to whether girls or boys show the greater tendencies to eye difficulties of sufficient gravity to warrant placement in sight-saving classes. Experience in the myope classes in England seems to indicate that a greater number of girls suffer from myopia than boys. It is interesting, therefore, to note that in the United States practically the same sex distribution is found in sight-saving classes as in the regular school population of the cities studied, the distribution of children in regular grades being, males, 50.9 per cent, females, 49.1 per cent, as compared with 50.7 per cent and 49.3 per cent, respectively, in sight-saving classes.

Provisions in Academic Junior High Schools

In the early days of sight-saving classes, the work was naturally experimental, and even if due consideration could have been given to older partially seeing children, it would probably have been unwise to attempt special secondary school education until some, at least, of the problems of educating partially seeing children in the elementary schools had been solved. There were, of course, other reasons for giving first consideration to younger rather than older pupils. In many cases, the younger the age at which such children can receive attention, the greater may be the success in keeping the eye condition from growing worse, and that hope of success is further augmented by the fact that at an early age the formation of good habits is more possible and there are fewer bad habits that have to be overcome.

The real reason, perhaps, lay deeper. There was an almost general acceptance of the feeling that, because of the seriously defective vision by which pupils in sight-saving classes were handicapped, they should not be educated beyond what the elementary school had to offer. For some time, so tacit was the acceptance of this opinion, that higher education for these children was not even a moot question, except to the individual teacher who saw the need for some action, especially in the case of myopic children. Not only did these children seem to present greater intellectual ability than any other particular group, but the very fact that their eye condition prevented them from joining in the majority of outdoor games tended still further to make them studious, since they were likely to fall back upon the things they could do, however injurious these might or might not be to their sight.

It became evident to the thoughtful teacher that children of this sort would continue their studies whether or not provisions were made for them, and that it would be much better to have them do so under correct conditions than under haphazard ones. Hence, many teachers took upon themselves the added burden and responsibility of keeping such children in their sight-saving classes after they had com-

pleted the work of the elementary school, preparing for them an enriched curriculum and in some instances giving them the actual work undertaken in junior and senior high schools. As the group needing this assistance grew larger, it became evident that better arrangements would have to be made for both pupils and teachers, and the next logical step was to arrange for the education of graduates of elementary schools in junior high schools. Where no junior high schools were established, the problem was not so difficult because, since children remained in the elementary school until the eighth grade was completed, sight-saving class pupils could continue in their work up to this grade.

Much consideration was given to the arrangement which would prove best for the education of partially seeing children ready to undertake junior high school work. It was thought by some educational authorities that since these children had from the time of their entrance into a sight-saving class been imbued with the idea of using the best method for taking care of their sight, with some help they could take the responsibility upon themselves. Others argued that children of junior high school age were altogether too young to assume such a burden of responsibility. The outcome was that, wherever possible, junior high school sight-saving classes were established and placed under a trained teacher, the same methods being used as in the elementary school with the exception that the responsibility was gradually shifted from the teacher to the pupils. Of 80 cities reporting, 30 have established junior high school sight-saving classes.

In the junior high schools the seventh, eighth and ninth grades are represented. Teachers of sight-saving classes in junior high schools have, therefore, but three grades. On the other hand the assignments in reading and for general preparatory work are so much greater than in the elementary schools, that it proved impossible for the teacher to read for the pupils those assignments not in large type. Hence, the plan of employing student readers was worked out and is being used in a number of places. According to

this plan student readers are selected from pupils in the regular grades who are doing the same work as the sight-saving class pupils. Instead of reading assignments to themselves, they read them aloud, either in study periods or by special arrangements after school hours. All work, however, is done in the school building under proper conditions, so that when sight-saving class pupils and their readers leave the school building all home preparation has been completed for both groups. Naturally, pupils well up in their grades are selected as readers; they are paid at the rate of about twenty cents an hour in states where a per capita appropriation permits of this. Where there are no funds available for this work, they receive certain credits that count toward graduation. This plan works out exceedingly well and permits the sight-saving class teacher to care for a larger number of pupils, thus reducing the cost, since the time of the readers is less valuable than that of the teacher.

In many of the smaller communities, however, there is not a sufficient number of sight-saving class pupils to warrant the establishment of a class in the junior high school. Various methods of meeting the problem have been tried. In some instances these pupils enter the junior high school as do other children, taking as much of the responsibility as possible, but having the benefit of the advice and partial supervision of the teacher of the elementary sight-saving class. Usually such a teacher has her hands full with the problems of her own class and cannot give adequate supervision, however willing and interested she may be, since her own class is in session at the same time as the other pupils are in junior high school.

A plan has been devised by which a senior in the senior high school is appointed to supervise the reading groups after hours. She is paid forty cents an hour, where per capita funds permit, or, as in the case of readers, receives credits. This latest plan has been put into action so recently that it is too soon to comment upon it, but it appears to be meeting the needs of the situation admirably.

Of the 95 cities or towns that have established sight-

saving classes, 66 are making provision for their junior high school pupils. The enrolment of pupils in seventh, eighth, and ninth grades is 1,160.

Provisions in Senior High Schools

Naturally, a time came when graduates of sight-saving classes in junior high schools presented the problem, as to how they were to obtain the more advanced educational opportunities offered in senior high schools. To solve this new problem some cities established sight-saving classes in the senior high schools and conducted them in a manner similar to those in the junior high schools. The majority of supervisors thought that it was time for these pupils, many of whom had nine years of sight-saving class training, to assume the responsibilities that sooner or later would fall to their lot. Hence, in the majority of cases, two high schools are selected in different parts of the city, and graduates from sight-saving classes in junior high schools are allocated to them. They enter these high schools as do all other high school pupils, except that an adviser, either a supervisor, a sight-saving class teacher, or a senior, is appointed to help in the selection of courses, to make the necessary contacts with teachers, and to arrange for student readers. Since all freshmen are new to the building, it is necessary to select readers before the close of the previous school year, and usually those readers who have proved efficient in junior high school work and are going on to senior high school are the ones selected.

By the time sight-saving class pupils enter senior high school, they should be so proficient in typewriting that they are able to prepare all their written work directly on this machine. A special portable typewriter has been designed for their use and many of them are permitted to take such typewriters into the lecture rooms and make their notes directly on them. Another important innovation is that these students are permitted to take all their examinations directly on the typewriter, the questions being prepared beforehand in large type.

Senior readers and advisers are paid in money or in credits, as in junior high schools.

Of 86 cities reporting: in 9.3 per cent sight-saving classes have been established in senior high schools; in 67.5 per cent partially seeing pupils enter high schools as regular students and are given individual help; in 23.2 per cent no arrangements are made.

The number of cities arranging for partially seeing children in senior high schools is very creditable, especially when the rather short time that the plan has been in operation is taken into account. It is, however, discouraging to note that a few of the larger cities have no provision for the constantly increasing number of graduates from sight-saving classes, elementary and junior high. Such pupils, if they have the courage to undertake the high school work on their own responsibility, often do so under conditions that force them, if they are to keep up with their grades, to abandon many of the sight-saving class methods that were so important a part of their education in the elementary school. It is essential that opportunities for education beyond those offered by the elementary school be provided for all partially seeing pupils who are able to take advantage of them.

Provisions in Vocational Junior High School

Excellent as has been the work of a large number of cities in making arrangements for partially seeing pupils in junior and senior high schools, the problem is far from being solved. Pupils ranging from 70 to 90 I. Q. are to be found in sight-saving classes, as in regular grades, and they will probably be unable to carry on more advanced academic work than is afforded by the elementary school curriculum. In addition, in both groups there are found those who, for economic reasons, cannot go on to senior high schools and may in many instances profit in the junior high school by an opportunity of training along vocational lines.

For the seeing groups in regular grades vocational junior high schools have been established in which, although a certain amount of academic work is required, emphasis is

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placed on vocational training. Until very recently there was no similar provision for partially seeing children. Two cities, Cleveland and Detroit, decided to try an experiment. The supervisors selected courses of vocational training that could be carried on by partially seeing pupils without injury to their eyes. Arrangements were then made with vocational junior high schools and a sight-saving class teacher appointed to take charge of the academic work. In these schools the plan of the elementary sight-saving class is reversed; the pupils take all the academic work, oral and written, with the sight-saving class teacher and make their social contacts with the normally seeing by taking the vocational work with them. Care is taken, of course, that directions, recipes, and other necessary printed matter are prepared in large type.

In Detroit the experiment is carried out with girls in cafeteria work. The partially seeing children meet with the normally seeing for discussion of menus, of balanced diet, and buying of supplies. The girls work in groups of two, sometimes a normally seeing and a partially seeing pupil forming the group, and proceed to carry out the orders of the day, preparing food, cooking it, serving it, and clearing away. The cafeteria in the vocational high school caters for a comparatively large group. The course is so arranged that at its completion the pupil is able to conduct a cafeteria, although it is hardly to be expected that any pupil of junior high school age would directly assume such a responsibility. This plan has been in operation for three years. The first year there were so many adjustments to be made that the results could not be fairly judged. The second and third years have been eminently successful.¹

In Cleveland the experiment was begun about the same time, a few boys and a few girls being selected. The plan for the girls worked out better than that for the boys, so a change was made and a center established in the Thomas Edison Junior High School, where a great variety of shop

¹ Dunlop, G. L. "Experimental Classes for the Education of Sight-Saving Class Pupils in Vocational Junior High Schools," Nat. Soc. for the Prevention of Blindness, *Proceedings*, 1929. pp. 15-19.

work is offered. Only low-visioned boys were chosen for the experiment and the approval of the school oculist was given. Half the time is spent in academic work and half given to shop work. Classes in woodwork, metal finishing, electricity, gardening, and music (band, drumming, bugling, and glee club) are open to the sight-saving class boys. As in Detroit, this experiment is considered very successful.¹

Since both of these experiments are proving so eminently worth while, it behooves educational authorities in other cities to give careful consideration to the groups for which these experimental classes are formed, so that pupils who, because they may fall within the *dull normal* group, or who for economic reasons must start very early to earn a living, may become assets rather than liabilities to the community.

Arrangement in Cities and Counties

Of the 350 classes in existence January 1, 1930, 348 are in cities and 2 are in counties.

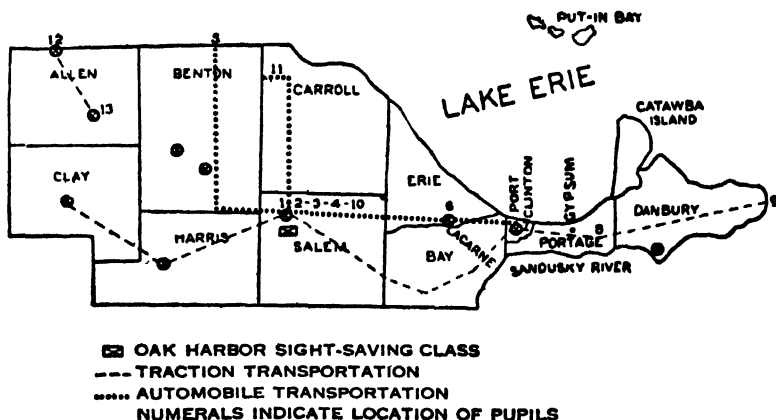
The first county class was established in Oak Harbor, Ohio, the second in Coleraine, Minnesota. Following these excellent examples, a number of other counties are preparing to establish classes.

Although the question of transportation for sight-saving class children is a difficult one in all places, it is particularly a problem in semi-rural and rural sections. The town of Oak Harbor was chosen instead of the county seat, first, because there was a nucleus of children already in this town and, second, because of the better transportation facilities.²

The transportation difficulties as shown by Chart VII will indicate something of the problem that even a semi-rural community has to meet.

¹ Black, H. O. "A Specialized Sight-Saving Class for Boys," *Sight-Saving Class Exchange*, June, 1930. p. 9.

² Hadley, H. O. and Hathaway, W. *Sight-Saving Classes; Their Organization and Administration*. See appended Bibliography.



Courtesy of Miss Alice Squires.

CHART VII. SIGHT-SAVING CLASS FOR A RURAL COMMUNITY—OTTAWA COUNTY, OHIO

Populations:

Ottawa County, approximately 22,000

Port Clinton, approximately 4,000

Oak Harbor, approximately 2,000

Note: Pupils 1, 2, 3, 4, and 10 are residents of Oak Harbor.

Pupil 5 travels twelve miles each way by automobile with high school students attending Oak Harbor School.

Pupil 6 travels by local school bus to La Carne, then takes special school auto on into Oak Harbor School (ten miles each way).

Pupil 7 travels by special school bus, 12 miles each way. This pupil traveled by traction last year.

Pupil 8 travels by individual auto five miles to Point Clinton, then takes special school automobile to Oak Harbor in the morning and returns by traction at night because of car schedule.

Pupil 9 travels 22 miles by traction morning and afternoon. The Gypsum and Port Clinton children are traveling by auto, first, because the car schedule was changed so that they had to leave home too early; second, because one sight-saving class student and two deaf students live at La Carne where there is no way except by auto, so that the total cost is lowered by including the Port Clinton and Gypsum children.

Pupils 11, 12 and 13 are children who should attend the sight-saving class, but have so far refused to do so.

Education in Rural Communities

A scattered population makes it well-nigh impossible to gather together a sufficient number of children in any one rural district to warrant the establishment of a sight-saving class. A few states that have established classes in cities have occasionally made arrangements for rural children to be boarded in the nearest city. Difficulties immediately present themselves. Parents, particularly those having young children, object to the separation of members of the family and to the traveling entailed. In addition, it is exceedingly hard to find suitable boarding-places. Occasionally a parent having a child in a sight-saving class is willing to take a rural child to board, but this cannot be considered a solution of the general problem.

Another method of arranging for the education of partially seeing children in rural communities is to have them remain in the district school and there give them every possible assistance. There are arguments for and against this method. It enables the child to remain at home; the members of the family are not separated, and the child will not have appreciably greater difficulty in reaching the district school than if he had normal sight.

On the other hand, it cannot be expected that a teacher in a rural school will be qualified to undertake specialized education.

The bright side of the picture lies, however, in the fact that since modern education is tending more and more to individual instruction, and since in the rural schools a great deal of individual instruction is necessary, a rural teacher may be able—if she can be given the material, be shown how to use it, and helped to arrive at an intelligent understanding of the conditions—to follow some plan that will be beneficial to the child.

Several states have under consideration a plan of including in their traveling libraries books in large type especially prepared for sight-saving class children, so that a rural teacher may obtain these for the various grades. Kentucky has already included such provisions in its educational laws.

These books, however, are of little use to a teacher inexperienced in this work, unless she has some definite help in understanding the child's eye condition and the use to which the books and other material may be put.

The National Society for the Prevention of Blindness offers assistance in this problem to rural teachers. The plan followed is to have the teacher report the eye difficulty from which the child is suffering, so that intelligent help may be given. A correspondence course of this nature has not been arranged in printed form, since it has been considered much better to take up with the teacher only such questions as pertain to the particular child under consideration. After the general principles have been laid down, she is encouraged to write to the National Society for help in each problem as it arises.

Such service is, of course, very limited and quite inadequate to meet the need, especially in those places where not even school nurses are available to assist in discovering the children's eye difficulties.

For rural communities there is a further possibility—trained sight-saving class teachers may act as visiting teachers. This, however, does not seem feasible as, owing to the long distances much of the time of such teachers would be taken up in traveling, rather than in actual teaching.

A few semi-rural and rural communities have considered the formation of so-called *mixed classes*. In these the plan is to gather together children presenting various physical handicaps, such as serious eye difficulties, serious ear difficulties and crippled limbs. Such a class calls for an unusual teacher, trained in the various types of specialized education needed by these children. A few teacher-training institutes, notably Teachers College, Columbia University, the University of California, the Michigan State College at Ypsilanti, the State Teachers College at Buffalo, New York, and others, are offering courses in various types of specialized education. It is possible that a teacher may, by hard work and perseverance, equip herself to undertake such a class in a semi-rural or rural community. It is, however, only

in states where financial aid is given that a community is likely to feel it can afford to offer such a teacher a salary commensurate with the necessary preparation and training.

Another plan has been suggested and considered by at least two states, although no definite action has yet been taken. This provides for the arrangement of a demonstration sight-saving class in connection with a normal school, having dormitory or cottage arrangements so that the children attending it may be cared for by a competent house-mother.¹ This arrangement does not obviate one of the chief objections, the separation from the family, but it meets two needs by providing an education for rural and semi-rural partially seeing children, and making possible an observation class for student and graduate teachers. Here they can see a trained teacher present the principals of specialized education and of conserving sight which they may use later when teaching in any community.

When it is remembered that 70 per cent of the school children of the United States live in towns having a population of less than 30,000, or in rural communities, it will readily be seen that the education of partially seeing children in rural and semi-rural places is a far greater problem than the education of these children in cities of over 30,000.

Chart VIII shows the distribution of sight-saving class pupils in communities of varying population. More extended information will be found in the Appendix, Table III, p. 227.

Provisions in States without Sight-Saving Classes

Of 27 states in which no sight-saving classes have been established, data are available for 26. Of these, one provides some sight-saving class material for such children; 13 make no provision; 12 send such children to a school for the blind. The District of Columbia has for several years past had the establishment of sight-saving classes on its program and to that end has had teachers trained for both white and Negro children. Congress has so far failed to make the

¹ Royer, B. F. "Constructive Program for Sight-Saving Classes in Pennsylvania," *Pennsylvania School Journal*, Oct., 1928. p. 81.

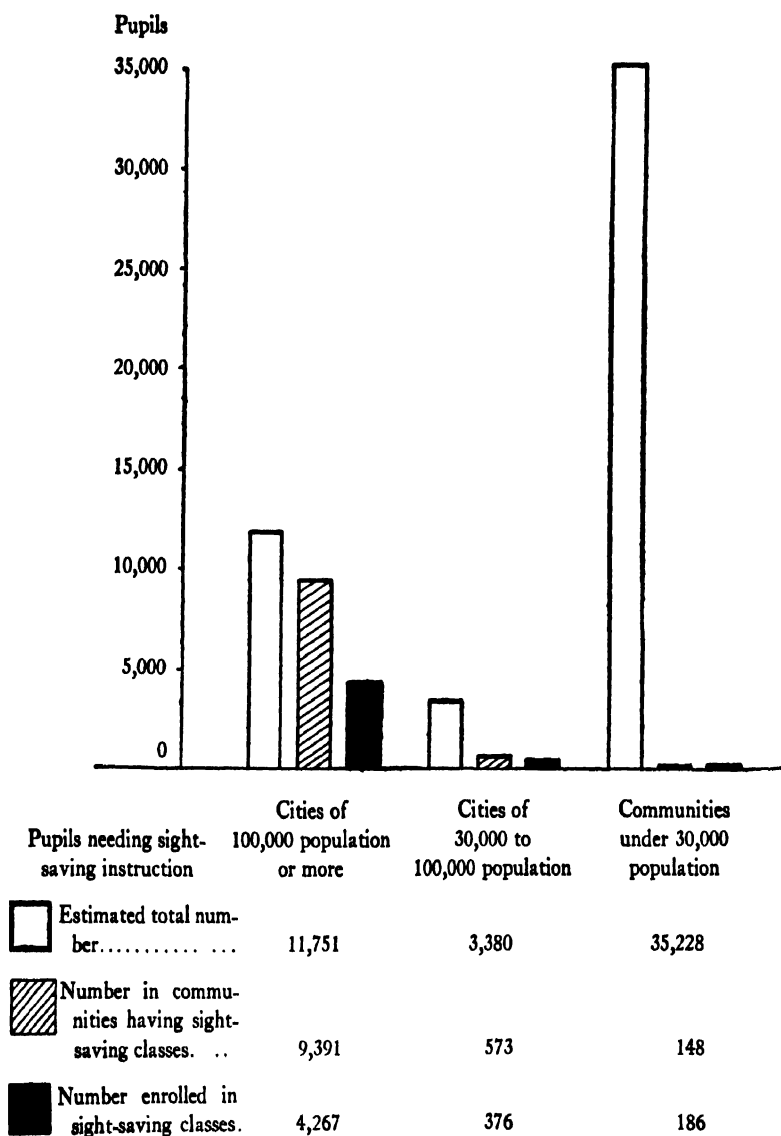


CHART VIII.—AVAILABILITY OF SIGHT-SAVING CLASSES BY SIZE OF COMMUNITY

necessary appropriation, so that the program has been held in abeyance.

In Wyoming, the State provided some material for partially seeing children, so a small beginning has been made, but being very largely a rural state, the progress is necessarily slow.

The following are the states that report sending partially seeing children to schools for the blind: Arkansas, Colorado, Delaware, Florida, Idaho, Montana, Nevada, New Mexico, North Carolina, South Carolina, Tennessee, Texas. There are many arguments against this way of meeting the problem.

Schools for the blind are established for the purpose of educating children who use the sense of touch as the chief medium of educational attainment, and material is arranged for finger readers rather than for sight readers. Since totally blind eyes cannot be harmed by inadequate or improperly controlled light, lighting (both natural and artificial) in schools for the blind, becomes a relatively unimportant problem so far as the pupils are concerned. In many such schools very little attention is paid to it. Since blind children seem to enjoy the cheer and warmth of sunshine, their school-rooms are often flooded with uncontrolled sunlight which may easily prove a source of severe eye fatigue to any seeing eyes, but more particularly to such eyes as are not normal. Eighty albinos listed on the rolls of schools for the blind give an excellent example of a group of children who should be most carefully guarded against any possible eye disturbance.

Where sufficient sight exists to be used as an avenue of educational approach, it is only natural that this should be employed. It is quite true that in practically all schools for the blind efforts are made to prevent children with partial sight from reading braille with their eyes, but this effort is wholly satisfactory only in very few cases. To read raised dots with the eyes rather than with the fingers causes far greater eye fatigue than to read ordinary ink print because there is no contrast in color between the dots and the paper; therefore, where vision is used for this purpose, partially

seeing children may be harming their eyes more than they would in regular schools for the seeing.

There are reasons other than those already noted why partially seeing children should not be educated in schools for the blind. The school years are the ones in which most life companionships are made. Seeing children having blind companions for the many years of school life may later be quite at a loss to adjust themselves in a world of seeing people. Moreover, having sight, which their companions lack, they show a tendency to develop an exaggerated ego. When it becomes necessary for them to take their places in the world in which the great majority of people have more sight than they, readjustment is exceedingly difficult and such people are apt to go to the other extreme and develop an inferiority complex. Again, since seeing pupils in a school for the blind can do many things not possible for their blind companions, they are apt to become restive under regulations made for the blind pupils, and it has been the experience of more than one superintendent of a school for the blind that these children leave school much earlier than they would be likely to do were they being educated in the public school system where no such special regulations exist. They go out into life with a double handicap, defective vision and lack of education.

Three state schools for the blind report that they have established sight-saving classes for partially seeing children. This provision takes care of the first objection to the education of seeing children in schools for the blind, the possibility of their reading raised print with the eyes rather than with the fingers, but the other objections remain. One school reports that one-fifth of all its pupils are able to read large type books. Another reports 46 pupils, scattered through 8 grades, who have a visual acuity of between 20/70 and 20/100. In this school large type books are provided but there is no sight-saving class.

Forty-four residential schools for the blind report that they have in attendance 673 pupils (16 per cent of their total enrolment) who have sufficient vision to permit them

to read ink print. Statistics are not available concerning the number of pupils who are able to read large type, but this is doubtless much greater than those able to read ordinary print.

Two schools for the blind have taken a very decided stand. Their position is that children who can use large type books should be cared for by the public schools and have no place in a school established and maintained for blind children, therefore they refuse to accept them.

Before sight-saving classes were established, the schools for the blind offered almost the only opportunity for the education of partially seeing children. This led to great confusion in the minds of the public as to any distinct difference between blind and partially seeing children. This is scarcely to be wondered at, but it seems almost incredible that some educational authorities should fail to make this distinction and should continue to take it for granted that any child who cannot see well enough to make use of the ordinary school equipment is blind and should be educated in a school for blind children.

It has been shown that public school systems, city, county, and rural, have made as yet—except in notable instances already mentioned—little provision for partially seeing children; but now that methods of education, educational media, and trained teachers, may be made available, it would seem that any tacit continuance of the plan of sending partially seeing children to a school for the blind should no longer be tolerated. Extended research seems to be necessary in order to determine upon a course of action that shall result in the best educational opportunities for all children handicapped by eye difficulties.

Provisions for Classes in Parochial Schools

The distribution of sight-saving classes according to school systems is noteworthy; of the 350 classes on which this report is based, 348 are in public school systems and 2 in parochial schools.

The first class in a parochial school was established in

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Grand Rapids, Michigan, the second in St. Louis, Missouri.

With the very large number of children attending parochial schools throughout the United States, it is hardly necessary to call attention to the great need for other parochial schools to follow the example so well set elsewhere.

By Race and Birthplace

Consideration has been given to the distribution of sight-saving classes according to territory in cities, counties, and rural districts, and according to school systems.

It is of interest to note the distribution of classes according to race:

Number of classes for white children.....	347
Number of classes for Negro children ¹	2
Number of classes for Mongolian children.....	1

The history of classes for white children has already been indicated. The first class for Negro children was established in the city of Philadelphia, the second in the city of St. Louis, Missouri; both classes are taught by Negro teachers.

The one class for Mongolian children is situated in San Francisco and, so far as is known, is the only class of its kind in the world.

Many questions have arisen as to the probability of certain races and natives of different countries being more susceptible to eye difficulties than others. A study was attempted for the purpose of drawing some conclusions, but inadequacy of data made this impossible. At the time the survey was made by Dr. Edward T. Myers, a group of 3,095 sight-saving class children showed the following distribution: white, 90.5 per cent; Negro, 8.9 per cent; Mongolian, 0.6 per cent. Of 2,996 children of the same group, 93.7 per cent were born in the United States, but 59.1 per cent of the

¹ Since the survey was made, classes for Negro children have been established in Baltimore and Cincinnati, and plans made for a second class in Baltimore.

fathers and 56.4 per cent of the mothers were of foreign birth.

It will be noted that 8.9 per cent, or 277, of the number quoted are Negro children. The apparent discrepancy between this number and the number of sight-saving classes given elsewhere is explained by the fact that in many states no distinction is made between white and Negro children. It is true that there are several other classes composed wholly of Negro children but they are not designated as classes especially for these children; they are usually found in schools situated in districts in which a Negro population predominates. Occasionally, all but one or two of the children will be Negroes, just as in other classes all but one or two are white children.

It will be noted that of states having sight-saving classes only four, Georgia, Louisiana, Missouri, and Virginia, are Southern. The necessity for establishing separate classes for white and for colored children has possibly been influential in retarding the establishment of classes.

Methods Obtaining in Classes

Administrative Direction. In states where there is a state director of special classes the administrative direction centers in his department. Such administration concerns itself with: the arrangements for obtaining and administering the budget and with laying down conditions under which state aid may be granted; certification of teachers according to the provisions of the educational law of the state; inauguration of training courses for new teachers to meet the state regulations; stimulating the formation of new classes throughout the state, in particular in those places where there are no local supervisors; establishing county classes and making other arrangements for the education of rural children needing this type of specialized education. Such a state director may withhold payment of the state appropriation in cases where conditions laid down by the state are not met; may initiate training courses for the training of teachers; may appoint part-time supervisors for places too

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small to warrant full-time supervision; and may assist educational authorities in larger places in the selection of a supervisor.

The State of Ohio gives an excellent example of state administration for the establishment and maintenance of sight-saving classes. In the State Department of Education there is a director of that division of special classes which include five types of special work: classes for the crippled; the deaf; the hard of hearing; partially seeing children; and blind children.

This director is actively engaged in the many phases of the organization and administration of sight-saving classes. It is in part due to the excellent work of this department that Ohio is the leading State in the Union in sight-saving class work.

Supervision. There are comparatively few cities that have a sufficient number of sight-saving classes to warrant the appointment of a supervisor who shall devote entire time to this work, therefore, the supervision of sight-saving classes and braille classes is almost invariably combined. Even with such a combination, few cities have supervisors who do not include several different types of classes in their supervision. The majority of sight-saving classes are under the control of a supervisor of all kinds of special classes. Although this is a reasonable way of meeting the problem, it tends to be exceedingly detrimental to sight-saving classes for the reason that very few supervisors of all special classes have specialized in sight-saving class work.

Since special classes for mentally deficient children are almost invariably the first to be formed in any community, and since they are the largest in number of all special classes, it is not surprising that the usual procedure is to select a supervisor who has specialized in this work. All too often, not only his training but his chief interest centers in this group. It is a mistaken idea that, because a supervisor is successful in supervisory work for the mentally deficient, he necessarily understands the problems and complexities that arise in the education of the physically handicapped. One of the diffi-

culties probably has its origin in a wrong idea of what supervision means; it is so often thought that administrative detail is the chief aim that the real aim, better teaching, is lost sight of.

The problem, then, is what is to be done in a community where enough sight-saving classes have not been, and cannot be, established to warrant the appointment of a special supervisor. Ohio has answered the question very definitely. Two cities, Cleveland and Cincinnati, have their own supervisors. The rest of the State is divided into two sections, north and south, and the State Director appoints supervisors experienced in sight-saving class work to supervise this type of class. According to this arrangement, the two cities of the State just mentioned have full-time supervision, the other cities part-time supervision. Even the smallest community having a sight-saving class, whether this be a city, town or county class, has the benefit of expert supervision by a person qualified to give the necessary help and advice. Such a supervisor is a liaison officer between the sight-saving class teacher and the school principal, or school superintendent, as the case may be. He organizes new classes, submits the budget to the director, makes lists of supplies, and, most important of all, assists the teacher in giving the best possible advantages to the pupils. Except in the cases of Cleveland and Cincinnati, these supervisors are paid by the communities they supervise for the actual days of service given. They are responsible to the State Director for the proper maintenance of the classes and for keeping up the standards.

The second method of solving the problem is concerned with communities having a supervisor of all special classes. Such persons, to be able to give adequate service, must acquaint themselves thoroughly with the requirements of the various groups. Even the best teachers of sight-saving classes are helped by constructive supervision.

A study such as this cannot go into detail concerning the qualifications of a good supervisor. The fundamentals of supervision are the same, whatever the group. The quality of the supervision for special work is measured by the

ability to adapt principles to each group and such adaptation can be made only through an intelligent knowledge of the needs of the group, whether such needs be physical or mental.

In the majority of states supervision of sight-saving classes is inadequate and inefficient in fulfilling the purpose for which it is intended—better teaching. In many cases this is not the fault of the supervisor. Failures arise from the misconstruction put upon the supervisory work; the arranging for too varied a program including too many types of handicaps; requirements necessitating supervisors to spend too much time on clerical and detail work, and the fact that they have too many classes to cover. The fundamental error, however, is in the misconception that because a person has the qualifications to supervise one group efficiently, he must be equally able to supervise any group without further effort to become acquainted with the new problems presented. Good supervision of sight-saving classes, contrary to preconceived notions, cuts down rather than adds to the expense of sight-saving classes, since it reduces to a minimum the waste of effort, time and material.

Of the 93 cities and 2 counties having sight-saving classes, in 21 cities the classes are supervised by special supervisors for this particular work (in some instances supervision of braille classes is included); for the classes in 34 cities supervisors of special classes are employed. For the remaining classes there is no special supervision accorded other than that given to regular grade classes. Since supervision is exceedingly important for training teachers in service, for keeping them in touch with the most advanced educational methods and the best material, for organizing new classes and for making contacts with regular grade teachers, school principals, school superintendents, and in particular with ophthalmological service, it is a most important factor in the success of the classes and cannot be accorded too careful consideration.

The same controversy as to supervisory authority arises in sight-saving class work as in regular grades. Is the special

supervisor or the principal of the school the authority for directing the work? Such questions have occupied the minds and pens of numerous individuals dealing with the general question of supervision. When time and energy are wasted in friction between supervisors and principals just that amount is lost to the children for whom the classes are being conducted. It is conceded that a supervisor who has made an extensive study of the subject from all its angles should be the authority on educational matters relating to the use of the eyes. Without the aid of the principal it would be practically impossible for a supervisor to carry out a constructive, cooperative program, since the administration of the school is under his jurisdiction. Promise of some solution of the problem, so far at least as sight-saving classes are concerned, lies in the fact that an increasing number of principals who have these classes in their schools are taking special courses, or giving intensive study, to enable them to have a better understanding of the work. The greater their understanding, the less will be the difficulty. A decision on the general question of the relation of supervisor to school principal in the school system as a whole, will help to solve the problem in the case of special classes.

Teaching. There are no courses of study specially prepared for children in sight-saving classes; the object always kept in view is to conform as nearly as possible to the work undertaken in the regular grades. There are two reasons for this. In the first place, these children are mentally as able to undertake the work as are normally seeing children, and, in the second place, about 4.5 per cent of the pupils in sight-saving classes are able to return to regular grades, and they would be at a great disadvantage if they had been pursuing a different curriculum.

It is the adaptation of the work that is important. With the exception of a very few subjects, the regular school curriculum is followed and the same work is undertaken in the special class as in the regular grade. Where any change is made it is in the nature of a substitution or modification, rather than an omission. Thus, eye fatigue may occur in de-

tail drawing, but no child is deprived of the chance of illustrating his story by original work because he may not be permitted to draw. He may accomplish the same result by free-hand cutting, by modelling, by a sand table project, or by mass painting. Likewise, no child is deprived of map work in history or geography just because he cannot use the maps provided for normal eyes; his map consists of an outline form, black on buff, or buff on black, or in colors sufficiently contrasted to produce the result of clear outline. There are no names printed on this map; a plan is used by which special projects are carried out one at a time; capitals may be marked in bold, distinct ways and a key given on the opposite page.

In a few cities music scores are permitted if they are in large type, but in the majority of cases lessons in music are confined to appreciation of music and rote singing. Where a child shows a decided talent for music, instrumental or vocal, special attention is given to him, and efforts are made to provide training under conditions suited to his special needs as a sight-saving class child.

Qualifications for Teachers

The ultimate success or failure of a sight-saving class rests with the teacher, so it is of the utmost importance that teachers be selected who have the attributes for success.

The work of sight-saving classes is carried on as nearly as possible like that of regular grades, and it is essential that teachers of these classes have the fundamental qualities and educational training of any good teacher. It is furthermore essential that they undertake special training for the particular work of teaching a sight-saving class.

A teacher who is trained to teach elementary school grades is not as likely to make a successful teacher of a high school class as is the teacher trained for that particular group. Likewise, a teacher trained to teach high school subjects is often unable to adapt her teaching equally well to young children. It would seem in the main essential that

teachers of sight-saving classes be appointed to teach those groups, elementary, junior high, or high school, for which they are certificated and for which they have had experience in work with normally seeing children.

There are many reasons why a teacher contemplating specialized work, such as teaching a sight-saving class, should have considerable experience with the normal group. Just so far as it is possible, the education of the handicapped should run parallel to that of the normal. A teacher who does not carry into specialized work the normal attitude, or who becomes so engrossed in her own special work that she loses sight of the normal, is apt to add handicaps to those that already exist in her group.

In sight-saving classes, since several grades may be and usually are represented, a teacher should have experience in instructing more than one grade, so that she will not have to make too many adaptations to new conditions all at one time. On the other hand, a teacher who remains too long in regular grade work before undertaking new lines of specialized education is apt to find it difficult to make adaptations to conditions differing from those to which she has become accustomed. Successful teaching in regular grades for at least three, preferably five years, should lay a good foundation and help the teacher to keep the normal viewpoint. In fact, in some states teachers qualifying for specialized work are allowed a certain number of credits for successful teaching in regular grades. In many places they cannot qualify unless they have regular grade experience.

A study of fundamental education and experience prior to sight-saving class work was participated in by 227 teachers. The results are shown in Table 9.

Special Requirements for Teachers¹

Considering the newness of this type of education and the fact that classes have been established in only 21 states

¹ For the complete discussions of the training of teachers for special classes, see "Training of Teachers." pp. 553 to 579.

TABLE 9

SIGHT-SAVING CLASS TEACHERS CLASSIFIED BY GENERAL EDUCATION AND EXPERIENCE PRIOR TO TEACHING IN SIGHT-SAVING CLASS

General education and experience	Teachers reporting	
	Number	Per cent
General education		
College graduates.....	44	19.4
Normal school graduates.....	167	73.6
Less than normal school training.....	16	7.0
<i>Total</i> number reporting on this item.....	227	100 0
Non-college graduates having some college courses	153	67.4
Experience in years		
Less than 1.....	6	3 0
1 to 2.....	12	6 0
3 to 5.....	23	11 4
5 to 9.....	47	23.4
10 to 14.....	57	28 4
15 to 19.....	32	15.9
20 to 29.....	20	9.9
30 or more.....	4	2.0
<i>Total</i> number reporting on this item.....	201	100.0

Note: Figures are from E. T. Myers' survey data.

(some of these with but a small number of classes), it is not surprising that there is no uniformity in the educational requirements for teachers of sight-saving classes. In one particular, however, the states are practically unanimous. A teacher must meet the fundamental educational requirements for teaching in the state in which she is to undertake this specialized work.

The distinction lies in the amount of special training required for the particular type of class to be established. At the lower end of the scale stand those states that require no special training, either before placement or in service. It is quite true that a good teacher may be successful under practically any conditions, and likewise that no amount of training may fit others for a particular job. But, even with the best of teachers, special training would seem necessary so that they may not have to earn this particular experience with a handicapped group that can ill afford to be the subjects of experimentation. It is always to be borne in mind

that all classes are laboratories to some extent. Even the most adequate of fundamental training cannot be expected to prepare a teacher for every situation that may arise in the various types of educational work.

It is essential that instructors of training courses and supervisors of special classes who train teachers in service make every effort to weed out those who are not adapted to this work, so that the old cry that it is better to have a good teacher without training, than a poor teacher who must be given a job because she is trained, will no longer be heard with patience or consideration.

Some states have an indefinite ruling on the qualifications of teachers for special work, merely stating that such qualifications must be satisfactory to the state director or to the special supervisor.

At the other end of the scale are those cities and states that require a very definite schedule of training.

The city of New York has the following requirements:

To be eligible for appointment to a sight-saving class the candidate must hold a license from the state of New York permitting her to teach in the grades specified; she must have had three years of successful teaching experience in regular grades of the New York City Public School system. In addition, she must present credentials of having successfully completed the following courses: sixty hours in the pedagogy of teaching sight-saving classes, thirty hours of clinical observation in designated eye clinics, thirty hours of specialized physical education. She is then eligible to take an examination on the subject given by the Board of Education of the City of New York, and must pass an oral, a personality, and a health test. Successfully meeting all of the requirements gives the teacher a place on the eligible list from which appointments are made.

Since the chief avenue of educational approach of the blind child differs from that of the partially seeing child, efforts are being made to have very distinct courses of training. It therefore seems unwise to require prospective teachers of sight-saving classes to be acquainted with methods of teaching blind children. Since mentally deficient children are not accepted in sight-saving classes, there seems no reason

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The city of Baltimore has requirements, as follows:

Courses required	Credits
Special methods of teaching the blind and visual defectives, including observation, participation and practice teaching	4-8
The anatomy of the eye, eye defects, the hygiene of vision, and tests of vision	2
Clinical and abnormal psychology	4
Education of mentally and physically handicapped children	4
Special methods of teaching mentally handicapped children, or remedial instruction	2
Industrial arts and sensori-motor training (for teachers doing such work)	2
Mental hygiene of normal and problem children...	3
<i>Total Credits</i>	<u>21-25</u>
Other courses recommended	
Mental and educational hygiene	2
Vocational guidance	2
Educational sociology	2

The state of Pennsylvania has set up the following schedule:

Experience and Training Required	Semester Hours Minimum Maximum
Experience: Teaching in approved special classes of this type or in schools for the blind, or approved teaching in other school work	0.....12 ¹
Content courses: In education of the blind, or partially blind, psychology of vision, psychology of atypical children, mental tests, physical education ²	4..... 8
Manual arts suited to the partially blind, and typewriting	0..... 6
Special methods or approved examination	6..... 8
<i>Total Semester Hours</i>	20 ³

¹ Experience may be counted at the rate of 4 semester hours a year.

² Approved examination credentials may be offered for 4 semester hours of this requirement.

³ Beyond 20 semester hours credits may be given for unassigned courses.

why courses of training for teaching the mentally deficient would be of benefit to a sight-saving class teacher, or why she should be required to take such courses to receive the differential in salary, any more than teachers of regular grades should be expected to do so.

Of infinitely greater help to the teacher in her special work would be courses in the psychology of childhood, vocational guidance, industrial arts, typewriting, manuscript writing, lighting; any courses that would make it possible for her to bring to her work a broader knowledge of educational methods and of advances in the general field of health education, particularly by keeping abreast of the times in regard to ophthalmological advances and improvement in lighting conditions.

Special Course of Training

By special training is meant training that bears a direct relationship to the work of teaching a sight-saving class. Fundamental training should include work in psychology that could be applied to any group and a sufficient amount of psychiatry to enable a teacher to meet such problems of behavior as might be likely to occur in any group. There is, however, a special psychology of the handicapped dealing with maladjustments that occur first, because the person is handicapped and second, because of the inhibitions and complexes arising from the particular handicap. Thus, a child with such very serious imbalance of eye muscles as to cause marked crossed eye may develop an inferiority complex that will affect all his social reactions; a child with such a high degree of myopia that he cannot compete in games may develop a self-centered attitude.

In considering special training, attention should be given to these phases as well as to the generally accepted form of specialized work. The object in giving training courses is to provide for an all-round curriculum that will lay an adequate foundation. It must always be borne in mind that in special education, as in all types of educational work, education of the teacher is a continuing process, and that

a fundamental course, however helpful it may be at the time, cannot possibly qualify a teacher to meet the educational advances that are constantly being made.

However much difference of opinion there may be in regard to contributory courses, there should be, for teachers of sight-saving classes, a common fundamental basis of specialized work on which to build. This may be summarized somewhat as follows:

1. *Administration and Organization of Sight-Saving Classes.* This is essential in all cases, but particularly important where there is no supervisor trained to take charge of the initial steps and the ensuing administrative details. Even in cases where there is an adequate supervisor such work is helpful. Sight-saving class teachers should be intelligently informed on organization and administration problems, not only for their own guidance, but also to enable them to explain to parents, other groups of teachers, and the public at large the fundamentals of their specialized undertaking.

2. *Special Training in Methods of Teaching Sight-Saving Classes.* This training must be built upon the fundamental training in methods of teaching. An instructor of such a course does not devote time to a discussion of the best methods for teaching regular grades. She expects the candidate undertaking sight-saving class work to be grounded in these, so as to permit full discussion of how they may best be adapted to sight-saving class needs. The sight-saving class teacher must not only know the best methods and their adaptation to the needs of the individual pupil, she must constantly keep abreast of modern methods so as to improve her specialized work. To be sure, a static teacher has no place in any part of the school system, but, because of the greater difficulties presented by the sight-saving class group, a teacher of this work must be dynamic if she is to keep her pupils ever alert and interested despite their handicaps.

3. *Physiology and Hygiene of the Eye.* A sight-saving class teacher must have a sufficient knowledge of eye difficulties to enable her to differentiate in the adaptation of methods to individual cases; she must be sufficiently conversant with eye hygiene to enable her to make intelligent efforts to conserve the sight of her pupils. Without a fairly accurate knowledge of the anatomy, physiology, and hygiene of the eye, she cannot be expected to appreciate eye conditions.

A knowledge of common eye diseases is essential, as is also some understanding of refractive errors and of physiological optics, for her to appreciate why glasses should be worn in some instances and not in others; why some pupils should wear them at all times, and others for certain work; why both lenses and frames should fit the individual for whom they are intended; why they must be kept centered, straight and clean; and why scratched lenses need to be replaced. Facility in reading prescriptions is of considerable importance, since a teacher may have to depend upon these until a full report is forthcoming; in addition, this facility makes it possible for her to know, at least in a general way, whether the child is wearing his own or someone else's glasses. It is not an unknown event in sight-saving classes, or indeed in regular grades, for a child suffering from myopia to be found struggling to see through glasses belonging to a member of the family who is suffering from farsightedness due to age.

4. *Observation and Practice Teaching.* Theoretical work can, of course, form a basis on which to build, but the practical knowledge of how to use theories is likewise essential. Observation and practice teaching in a demonstration class become requisites. In addition, to be able to put theoretical knowledge into practice, the teacher should have observation under direction in an eye clinic in order that she may develop a scientific attitude toward disease and overcome a feeling of repugnance to its manifestations. A teacher who has not

or cannot develop this attitude should not enter sight-saving class work.

In special courses of training for sight-saving class teachers, these various phases of work correlate so closely with one another, that much of their value is lost if they are taken as separate courses rather than as a unit course. In such a well-rounded course, it is possible all along the line to make direct application to the actual teaching of partially seeing children. Experience indicates that some teachers who have taken but one part of this suggested training not only feel that they are qualified to undertake the work, but in some instances have actually been able to persuade school superintendents and supervisors that they are fully equipped. Needless to say, in many such instances the results have been disastrous.

The educational authorities might give a provisional certificate to teachers having the fundamental training required by the community in which the sight-saving class is to be established, the necessary experience in regular grade work, and the fundamental special training just outlined. If the teacher's work proves satisfactory, a limited certificate with increases in salary might be given as soon as contributory courses, as suggested, have been completed. Permanent or life certificates often have the pernicious effect of closing the teacher's personal educational record.

Methods of Obtaining Special Training

There are three ways of obtaining special training for teaching a sight-saving class:

1. Courses of training offered by universities, colleges and other teacher-training institutions in preparation for sight-saving class work.

2. Training in service. This is possible only where there is an experienced supervisor who is not only qualified to give the training, but who has sufficient time to devote to it.

3. Training by independent personal study and reading. By this third method theories may be learned and appre-

ciated, but in such cases the teacher would be obliged to obtain her experience with a group already handicapped, and, as has been mentioned heretofore, the sight-saving class is not the place for this type of experimentation.

Courses Offered by Teacher-Training Institutions

In the pioneer days of this type of specialized education, it was necessary for teachers to blaze the trail. It soon became evident that there was an enormous waste of time and energy because each newcomer was unable to make use of the experience of those who had gone before. Quite early in the history of the classes some few groups gathered together and pooled experience, but there was no concerted action until 1921, when a number of organizations in New York and New Jersey cooperated to underwrite a course at the summer session of Teachers College, Columbia University. Other teacher-training institutions followed in the order given: Peabody College for Teachers, Nashville, Tennessee; University of Cincinnati, Cincinnati, Ohio; Senior Teachers College, Western Reserve University, Cleveland, Ohio; University of Southern California, Los Angeles; University of Chicago; Michigan State Teachers College, Ypsilanti; State Teachers College, Buffalo, New York.

In the meantime, other teacher-training institutions began to offer courses during the regular college year. The first of these was New York University, New York, the example of which was followed by State Teachers College, Detroit, Michigan; Michigan State Teachers College, Ypsilanti; and Teachers College, Columbia University, New York, and the University of California.

So far the demand for trained teachers has been greater than the supply.

Although efforts have been made to offer courses in various parts of the country, so that teachers may not have to travel too far or be involved in too great expense for

training, it is becoming increasingly evident that states will have to meet their own teacher-training problems.

Of 227 teachers reporting on special training for teaching sight-saving classes, 78.4 per cent have taken one or more courses. However, considerably more data as to type and content of courses would be necessary to judge their value as preparation for this work.

Physical Condition of Teachers

It is not sufficient that teachers of sight-saving classes be intellectually qualified by mental attributes and training to teach sight-saving classes. The physical demands upon such teachers are usually greater than those made by regular grade work and the teacher unqualified to meet this strain all too often suffers a breakdown, or is counted among the failures, either condition reacting most adversely upon the children for whom the classes are established. In this particular, it must always be borne in mind that sight-saving classes, similar to all classes, are for the children and not for the teacher, and that no superintendent, supervisor or principal is justified in selecting or keeping a teacher who is unable, because of intellectual or physical handicap, to do the work.

One of the most important essentials in a teacher for a sight-saving class is good sight. It is evident that there still lingers in the teaching world traces of a belief in the old saying, "like to like." Probably nowhere has this been carried to the absurdity of selecting mentally deficient teachers to teach classes for the subnormal, but the idea is all too prevalent that a person handicapped with defective vision is particularly fitted to be a teacher of a sight-saving class. Nothing could be further from the truth, since these teachers must generously spend their own sight to save that of their pupils. There is a great amount of reading of assignments not found in large type books. There is also a very great deal of preparation of material in large letters and figures.

Experience indicates that there is much education to be done along this line among those who should not need it.

Neurasthenic teachers should not be foisted upon a handicapped group as a solution to the problem of what disposition is to be made of them. The children must have first consideration. It is not an uncommon attitude on the part of applicants for training for sight-saving class training that, because of long service in regular grade work, the teacher feels she has earned a rest. There is no rest for the teacher of a sight-saving class during school hours, or, in fact, during those many hours which she must give to preparation work if she is to carry out the chief aim of the class, to save sight.

Ability to Interpret the Work

It has already been stated that classes for mentally deficient children were the first special classes established, therefore, this type of work is much better known than that of any other of the specialized groups. With the public at large, a special class generally signifies a class for children with subnormal mentality. This is more likely to be true since classes for the mentally deficient use different forms of appellation, such as *Opportunity Classes*, *Classes for Ungraded Children*.

A suggestion that a child be placed in a sight-saving class is very frequently met with a refusal even to consider the transfer, because of the feeling that placement in a special class must indicate subnormal mentality. It therefore becomes the duty of the educational system to acquaint the public with the meaning of the various types of special classes. Often the only persons in the community with a sufficient knowledge of a particular type of class are the supervisors and the teachers of the special classes. Table 10 indicates the active part that supervisors and teachers of sight-saving classes are undertaking in this community work. A more exact interpretation of this table will be possible by considering percentages rather than numbers, since a far larger group is included than is apparent; the data refer to 86 of the 95 cities or towns having classes.

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TABLE 10

ACTIVITIES FOR THE EDUCATION OF THE PUBLIC ENGAGED IN BY SIGHT-SAVING CLASS TEACHERS, SUPERVISORS, AND ADVISORS

Activity	Teachers reporting	
	Number	Per cent
Lectures and informal talks	38	74.5
Magazine articles	20	39.2
News releases	24	47.2
Posters and exhibits	25	49.1
Home visiting	46	90.3
Demonstrations and special programs	4	7.8
Total supervisors and teachers reporting . . .	51	100.0

Note: Figures are based on replies from 51 supervisors and teachers whose reports cover activities of sight-saving class teachers in all but 9 of the 95 cities in which classes are located.

Total Qualifications of Teachers

The following suggestions regarding the qualifications of teachers for sight-saving classes were drawn up at the request of a number of superintendents of schools:

Educational Training

- a. Every teacher undertaking this specialized work should meet the academic requirements for regular teachers laid down by the school system in which she intends to teach.
- b. She should have special training in preparation for sight-saving class work at least equivalent to a minimum of an intensive six weeks' course, including lectures and discussions on the organization and administration of sight-saving classes, methods of teaching sight-saving classes, anatomy, physiology and hygiene of the eye, clinical observation in a demonstration class and in an eye clinic.

Educational Experience

Experience in successfully teaching regular grades for at least three, preferably five, years.

Personal Qualifications

A teacher undertaking this specialized work should be adaptable, judiciously sympathetic, and willing to keep abreast of the most modern methods.

Health Qualifications

A teacher desiring to undertake this work should be healthy, active, and alert. Since teachers of sight-saving classes must use their eyes to save the eyes of the children, excellent eyesight is necessary. It has been found more essential for a sight-saving class teacher to have good eyesight than for a teacher in the regular grade. Teachers with seriously defective vision should not be considered eligible for this work since such difficulties may prove a serious detriment to both children and teachers.

VOCATIONAL GUIDANCE AND TRAINING

There is considerable confusion in the use of the terms *vocational guidance* and *vocational training*. For the purpose of this report, they will be considered separately.

Vocational guidance may have several aspects. As used, in general, it signifies that help in the form of guidance which is given in the selection of an occupation, and in this phase sight-saving class pupils and teachers are vitally concerned.

Another aspect may be termed *prevocational guidance*, which to the sight-saving class teacher means a very definite responsibility placed upon her to guide a pupil from the time he enters her class so that he will select an occupation that will not be detrimental to his sight. This is achieved more often indirectly than directly, chiefly through lessons in eye hygiene. Of course, this subject is never taught for the purpose of making the child morbid about his eye condition, it is taken generally as a part of the program of health education. In this program, however, eye hygiene is sufficiently emphasized with each child so that he may recognize his own possibilities and limitations in the use of his eyes,

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and care is taken to emphasize the desirability or the non-desirability of certain types of occupation.

A child in the elementary school, unless he has a decided bent for a particular occupation, seldom knows what he wishes to do or to become, except for short periods of time when propinquity to one occupation or another may influence his desires. In instances where a special bent does exist, the teacher's responsibility is to consult with the oculist on the desirability of fostering it. If the occupation looked forward to would be detrimental to the pupil's sight, the teacher must attempt to foster an interest in another type of work as similar as possible to the occupation desired. For example a child who has decided artistic ability, but is suffering from an eye condition indicative of tubercular tendencies, may perhaps be interested in landscape gardening, an occupation which will give him the outdoor life necessary to build up the general health condition that is reacting upon his sight, satisfy his desire for creative art, and provide a means of earning a living.

Every sight-saving class teacher should be imbued with the spirit of giving wise vocational guidance, and in turn arouse in her pupils the desire to make a judicious choice. But, however thoroughly both teacher and pupil may be imbued with these ideas, it is useless to consider an occupation which the pupil would have no chance to enter. It may be that opportunities for following a certain occupation are not available in the community, and it may be quite out of the question for such a pupil to go to a community where opportunities do exist. The sight-saving class teacher and the personnel of the vocational guidance bureau, if there is such a bureau in the community, must consider many questions together: first and foremost, as has already been suggested, occupations that may be undertaken by the individual in question without further injury to the eyes; second, occupations that can be carried on by the partially seeing; third, the mental capacity of the individual to undertake this work; fourth, the social and economic conditions of the individual as related to the job; fifth, the availability of such an occu-

pation in the particular community; and, last, but far from least, the training the individual has which may help him to be successful in this occupation. None of these factors is independent, each is an integral part of the whole.

In a few places some work has already been accomplished along all these lines, but until there is a much more successful effort to solve the problem of how partially seeing children are to earn a living, there can be no satisfactory answer. Probably the first step is for those communities that have taken some action to pool their experience in order that energy may not be wasted in duplication of effort and that there may be some foundation upon which to build. The number of graduates and others leaving sight-saving classes for various reasons is thus far small, but the number of partially seeing people in the population at large is far greater than is usually supposed. The solving of the problem for the small group will offer a solution to a much larger number.

Vocational guidance and placement service are apparently available in many cities having sight-saving classes, as shown in Table 11. In actual practice, however, partially seeing children are likely to be neglected by the group dealing with seeing children and that dealing with blind children, each group feeling that the responsibility rests with the other.

TABLE 11

VOCATIONAL GUIDANCE AND PLACEMENT SERVICE AVAILABLE TO
SIGHT-SAVING CLASS PUPILS

Service	Teachers reporting	Sight-saving classes involved	
	<i>Number</i>	<i>Number</i>	<i>Per cent</i>
School vocational bureau for visually handicapped.....	7	85	25 7
School vocational bureau for all handicapped.....	2	10	3 0
School vocational bureau for all pupils.....	6	98	29 5
State rehabilitation service.....	4	6	1 8
Both school bureau and rehabilitation service.....	3	29	8 7
State association for the blind.....	1	8	2 4
No organized service.....	27	96	28.9
<i>Total for which information is available</i>	50	332	100.0

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The question of vocational training has already been touched upon in the consideration of vocational junior high school opportunities for partially seeing pupils. The experiments being carried on by Cleveland and Detroit set a precedent that should serve as a foundation on which to build more adequate opportunities for longer and more varied courses in junior and senior high schools. This development must, however, go hand in hand with a continuing research in communities as to the supply and demand, changes in industrial and professional conditions, and the economic return.

FINANCING CLASSES

The state makes education compulsory. Such a regulation can be enforced only when education is offered in a form that can be assimilated. It is only reasonable therefore that the state should assume its share in making education possible for all children. Fourteen states in the Union have assumed this obligation. The provisions for giving financial aid vary according to the educational laws of the state. Such provisions may take the form of: (a) the appropriation of a per capita amount; (b) the appropriation of a general sum for the establishment and maintenance of classes, the distribution to be made by a specified educational department; (c) an appropriation to cover a part or more of the teacher's salary; (d) a combination of two of the above.

Ohio was the first State to make a per capita appropriation for the education of partially seeing children, although in the original legislative act they were not specified as such but were included in the appropriation for blind children. This led to much confusion, so an amendment was added specifically mentioning partially seeing children. In this state the per capita appropriation is \$300 in excess of the amount of educating a child in the corresponding regular grade for a nine months' school term. For several years past, however, this amount has not been requisitioned; the amounts

claimed by the different cities have varied according to the operating costs, such costs being dependent upon salary schedules, and so forth. The apportionment of these sums is under the jurisdiction of the State Director of Special Classes for the Physically Handicapped.

Other States having a per capita appropriation are California, Illinois, Indiana, Michigan, Minnesota, Washington, Wisconsin.

The second method, that of appropriating a special sum each year by the state legislature for the education of partially seeing children, is exemplified by Massachusetts, the sum ranging from \$14,000 to \$15,000. It is administered by the Director of Children, State Board of Education, Department for the Blind.

Prior to July, 1929, New York was the outstanding example of a State appropriating half of the teacher's salary, provided this half did not exceed \$1,000. On that date, however, the education of partially seeing children was placed under the jurisdiction of the Bureau for Crippled Children of the University of the State of New York, the interpretation of a crippled child being "one who cannot, because of physical handicap, be educated advantageously in the regular grade." The appropriation in this bureau is on the equalization plan; the same amount is allowed for a minimum of 10 children in a special class as for a minimum of 27 children in a regular grade.

New Jersey exemplifies a combination of methods. A per capita appropriation is made of one-half of the excess cost of educating a child in the regular grade, plus \$500 for the teacher's salary.

Except by amendments or other arrangements satisfactory to state legislatures, appropriations must be made according to state laws. In some states, however, the educational law gives authority to the state board of education to enact its own regulations, and in such cases it is easier to make changes than in states where educational laws are definitely enacted by state legislatures.

Of the various methods presented, the per capita method

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has proved the most successful, since, unless otherwise specified, it permits the director in charge of administering the funds to use some discretion. A class which is being established needs a large outlay for equipment, whereas a class that has already been equipped has to meet only current expenses, including some additional equipment, such as paper, pens, pencils, and other supplies, and the replacement of worn out material. It is evident that it is possible under a per capita, or even under a general, appropriation to provide for supervision, either whole or part-time, according to the needs and to pay for student readers for junior or senior high school students. In cases where the appropriation is given as a part of the teacher's salary, funds for equipment must come out of other appropriations, and the establishment of sight-saving classes is often delayed because no such funds are available. To be sure, civic organizations often come to the aid of educational departments at such a crisis, but the responsibility of the education of all children rests with the educational authorities, and if the state expects to enforce the compulsory education law, it is its duty to provide funds in such a form that all aspects of the work can have due consideration. Table 12, Group A, indicates legislation in various states, including the District of Columbia; Group B deals with states having no legislation for establishing sight-saving classes; and Table 13 classifies the type of legislative provisions (if any) in each state, giving figures showing the total enrolment and the number of sight-saving classes established.

From Table 13 it will be seen that 94.5 per cent of the 350 sight-saving classes in existence January 1, 1930, have been established in states that not only make legal provision for such classes but also provide state aid. On the other hand, out of 35 cities having a population of over 100,000, in which no sight-saving classes have been established, 11 are in states making financial provision for them (Table 14). It would seem, therefore, that even where the opportunity is offered, some educational authorities fail to take advantage of provisions that would make education possible for

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TABLE 12

SUMMARY OF LEGAL PROVISION FOR ESTABLISHING AND FINANCING
SIGHT-SAVING CLASSES IN THE VARIOUS STATES

GROUP A. STATES MAKING SOME LEGAL PROVISION FOR SPECIAL CLASSES

State and no. of classes 1-1-30	Law provides			Financial aid from state	
	Sight- saving classes	Special education for		None	Amount of allotment where granted
		Blind	Handicapped		
Cal. (16)	×	—	—	—	$\frac{1}{2}$ excess up to \$100 per child
Conn. (3)	—	—	×	×	
D. C. (0)	—	—	×	×	
Ill. (26)	×	—	—	—	Excess up to \$250 per child
Ind. (3)	—	—	×	—	
Ky. (0)	×	—	—	×	$\frac{1}{4}$ of excess
Md. (2)	—	—	×	—	\$2000 per class of 10 or more
Mass. (32)	×	—	—	—	
					\$500 per year plus \$250 for initial equipment per class
Mich. (41)	×	—	—	—	Excess to \$200 per child
Minn. (19)	—	×	—	—	\$300 per child plus general grant for schools
Mo. (6)	—	×	—	—	
					\$750 per teacher provided it does not exceed $\frac{3}{4}$ of salary
N. J. (6)	—	—	×	—	$\frac{1}{2}$ of excess plus \$500 teacher's salary
N. Y. (92)	—	—	×	—	
Ohio (62)	×	—	—	—	Equalization (see notes)
					Excess to \$300 per child
Pa. (14)	—	—	×	—	25% of minimum salary of teachers in 1st class district; 30% in 2d, 3d, 4th class districts
S. C. (0)	—	—	×	×	5 times amount per normal child or about 65¢-70¢ per diem per child
Va. (5)	×	—	—	×	
Wash. (9)	—	—	×	—	Excess over \$70 up to \$250
Wis. (3)	—	×	—	—	
Wyo. (0)	—	×	×	×	
Total number of states (including the D. of C.)					20
Total number of classes					339

GROUP B. STATES HAVING NO SPECIFIC LEGISLATION

State	No. of classes	State	No. of classes
Alabama	—	Nevada	—
Arizona	—	New Hampshire	—
Arkansas	—	New Mexico	—
Colorado	—	North Carolina	—
Delaware	—	North Dakota	—
Florida	—	Oklahoma	—
Georgia	2	Oregon	—
Idaho	—	Rhode Island	2
Iowa	1	South Dakota	—
Kansas	—	Tennessee	—
Louisiana	5	Texas	—
Maine	—	Utah	—
Mississippi	—	Vermont	—
Montana	—	West Virginia	—
Nebraska	1		

Total number of states 29

Total number of classes 11

Notes: Funds not available in Maryland at present; appropriation only sufficient to cover "crippled" classes. Present Baltimore classes are financed locally. In New York the appropriation for 10 sight-saving class children equals the appropriation for 27 children in regular grades. The amount shown for Ohio is on the basis of a nine-month school year; for a longer year proportionate allotments are granted. Since the completion of this report, classes have been established in Colorado and Oregon.

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TABLE 13

STATES CLASSIFIED BY TYPE OF LEGISLATIVE PROVISIONS FOR SIGHT-SAVING CLASSES, WITH FIGURES SHOWING TOTAL SCHOOL ENROLMENT AND TOTAL NUMBER OF SIGHT-SAVING CLASSES ESTABLISHED IN EACH GROUP

Classification by legal provision for establishing sight-saving classes	No. of states	Total school enrolment in U. S.	No. of sight-saving classes	List of states included in group
Special legislation with financial aid.	14	13,004,175	331	{ Cal., Ill., Ind., Md., Mass., Mich., Minn., Mo., N. J., N. Y., O., Pa., Wash., Wis.
Special legislation without financial aid.....	6	2,055,108	8	{ Conn., D. C., Ky., S. C., Va., Wyo.
No special legislation	29	10,120,413	11	{ Ala., Ariz., Ark., Col., Del., Fla., Ga., Id., Ia., Kans., La., Me., Miss., Mont., Neb., Nev., N. H., N. M., N. C., N. D., Okla., Ore., R. I., S. D., Tenn., Tex., Ut., Vt., W. Va.
<i>Total</i>	49	25,179,696	350	

Classification by legal provision for establishing sight-saving classes	Per cent of total school enrolment	Per cent of total sight-saving classes
Special legislation with financial aid.....	51.6	94.5
Special legislation without financial aid . . .	8.2	2.3
No special legislation	40.2	3.2
<i>Total</i>	100.00	100.0

these children in a form that they can undertake. Chart IX shows a classification of states according to legislation.

Per Capita Cost of Education

The necessary material is not available from which to make a complete analysis of what is included in the per capita cost of establishing and maintaining either classes in regular grades or all types of special classes. It is therefore impossible to give accurate figures or to make any valid comparisons of the cost of educating special groups with that of educating children in regular grades, or comparisons of the maintenance cost of sight-saving classes with that of

TABLE 14
LIST OF CITIES OF 100,000 POPULATION OR MORE WHICH HAVE NOT
ESTABLISHED SIGHT-SAVING CLASSES, WITH NOTATION ON
AVAILABILITY OF FINANCIAL AID FROM STATE

Group A. Cities for which financial aid is available from state funds

Oakland, California	Yonkers, New York
Fort Wayne, Indiana	Pittsburgh, Pennsylvania
Camden, New Jersey	Reading, Pennsylvania ^a
Elizabeth, New Jersey ^a	Scranton, Pennsylvania
Trenton, New Jersey	Spokane, Washington ^a
Utica, New York	

Total number of cities..... 11

Group B. Cities for which financial aid is not available from state funds

Birmingham, Alabama	Oklahoma City, Oklahoma
Denver, Colorado ^a	Tulsa, Oklahoma
Bridgeport, Connecticut	Portland, Oregon ^a
Hartford, Connecticut	Memphis, Tennessee
Waterbury, Connecticut	Knoxville, Tennessee
Wilmington, Delaware	Nashville, Tennessee
Washington, D. C.	Dallas, Texas
Jacksonville, Florida	El Paso, Texas
Miami, Florida	Fort Worth, Texas
Tampa, Florida	Houston, Texas
Kansas City, Kansas	San Antonio, Texas
Louisville, Kentucky	Salt Lake City, Utah

Total number of cities..... 24

Grand total 35

^a Class established since completion of survey.

classes for other special groups. It is clear that there is no uniformity of practice. In some instances, a proportion of the original cost of buildings and a proportion of their maintenance may be included in the per capita cost. In others, only current expenses are included. Some educational systems may include for one year the entire cost of equipment, such as seats and desks, which in other cases may be distributed over the approximate period for which such seats and desks will be in use.

The same potential differences are to be expected in sight-saving classes. Since the physical equipment of a room, such as correct natural and artificial lighting, decoration of walls, woodwork, ceilings, and blackboard facilities, are the same as should be accorded any school child under ideal conditions, in some communities directors responsible for the budget of sight-saving classes feel that such changes as are

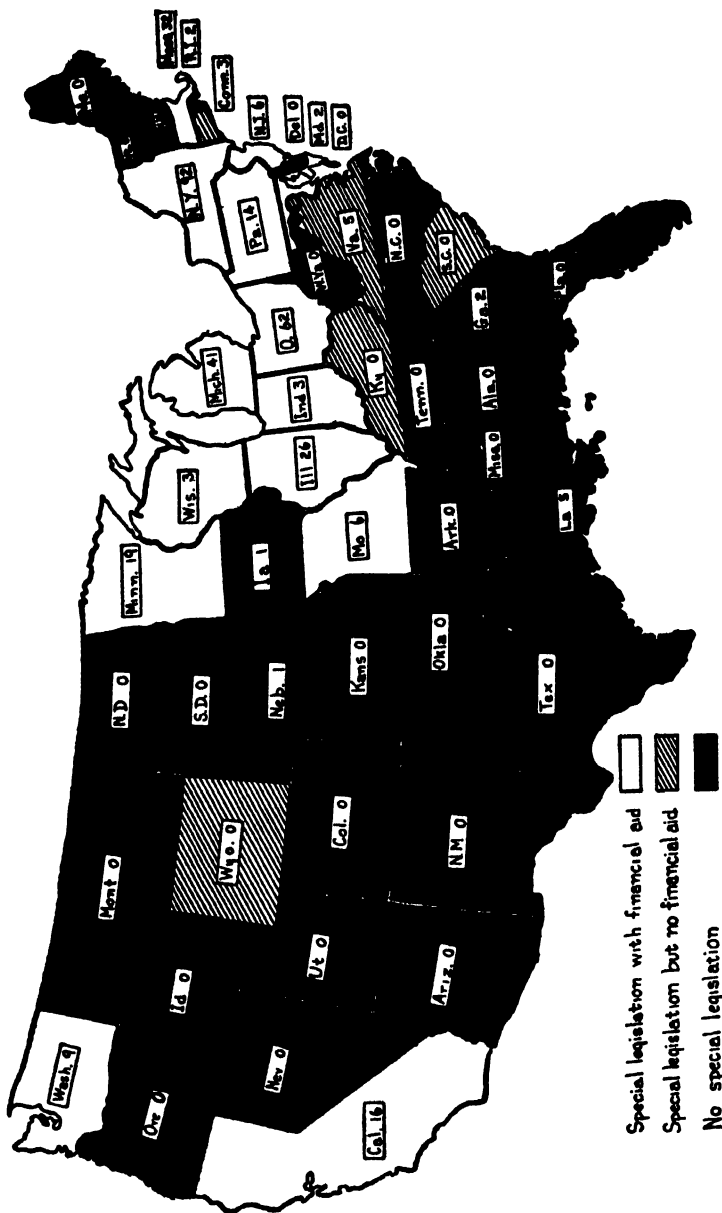


CHART IX.—MAP SHOWING STATES CLASSIFIED BY TYPE OF LEGISLATIVE PROVISION FOR SIGHT-SAVING CLASSES
 Figures indicate number of classes established as of 1-1-30.

necessary to bring about these ideal conditions should be made at the regular school expense rather than at the expense of the special class. In other places, such charges are included in the sight-saving class budget. In some cases, also, it has been found expedient, from an administrative standpoint, where a supervisor has both braille and sight-saving classes under her jurisdiction, to include the expense of both groups in one budget. Since classes for blind children are usually much smaller than classes for the partially seeing, the proportion of the budget accorded them is greater, as it is much more expensive to have a teacher for five children than for ten.

Again, similar differences must be taken into account in considering the cost of transportation. In many instances, it is necessary to supply bus service to transport practically all blind children, whereas a large number of partially seeing children may use car service, which is much less expensive.

All these points must be taken into consideration in reviewing the figures given in Table 15.

TABLE 15

PER CAPITA COSTS OF SIGHT-SAVING CLASSES WITH COMPARATIVE FIGURES
FOR NORMAL GRADES AND FOR SPECIAL CLASSES FOR DEAF AND CRIPPLED

Per capita cost group	Sight-saving classes
	<i>Number</i>
\$101 to \$150	2
\$151 to \$200	11
\$201 to \$250	195
\$251 to \$300	12
\$301 to \$350	6
<i>Total classes for which information is available . . .</i>	226

Type of class	Range of per capita costs	
	<i>From</i>	<i>To</i>
Sight-saving	\$132	\$331
Normal grades	\$47	\$124
Deaf	\$226	\$431
Orthopedic	\$88	\$378

Notes: Figures are based on replies from 21 supervisors and teachers whose reports cover 226 sight-saving classes out of a total of 350. It is not possible to state how per capita is figured. There is apparently no uniformity in the expenditure items included. Some items which are included in certain places but not in others are: Transportation, lunches, music and art instruction and administrative overhead.

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Table 16 estimates the cost of providing instruction for all partially seeing children.

TABLE 16

ESTIMATED COST OF PROVIDING SPECIAL INSTRUCTION FOR ALL CHILDREN WHO ARE PARTIALLY SEEING

Total enrolment in public schools (kindergarten through high school).....	25,179,696
Approximate number needing sight-saving instruction (ratio 1 to 500).....	50,000
Average annual per capita cost of instruction in regular grades.....	\$68
Average annual per capita cost of instruction in sight-saving classes—total.....	\$239
Average annual per capita cost of instruction in sight-saving classes—excess.....	\$171
Total annual cost (current expenses only) of public day schools.....	\$1,797,562,504
Estimated annual cost (excess) of providing special sight-saving instruction for all partially sighted children at \$170 per capita.....	\$8,500,000
Estimated amount already being expended annually for sight-saving classes.....	\$850,000
Estimated additional annual cost of sight-saving instruction.....	\$7,650,000
Approximate percentage increase in school expenditures needed to provide sight-saving instruction for all partially seeing children not yet provided for.....	0.4%

Notes: Figures for total school enrolment in the U. S. are for 1927–1928.

Figures for costs in regular grades are for 1927–28 and cover current expenses only.

Figures for costs in sight-saving classes were supplied by sight-saving teachers and supervisors. Average used is median for 226 classes for which information is available.

Comparison of Teachers' Salaries With Those of Regular Grades

Since, in addition to the fundamental training necessary to teach in a regular school system, those undertaking to teach special groups require special training in order to give the best possible instruction to the particular group under their charge, entailing extra time, cost, and energy, teachers of special classes are usually paid an amount somewhat in excess of that paid to the regular grade teacher. This differential varies in different communities. Moreover, in some instances where an extra amount is apparently paid, there are limiting clauses in the state regulations that may reduce this considerably, even to the point where there is no increase.

In one city, for example, an apparent differential of \$200 is paid to sight-saving class teachers, but a clause in the state law reads that no teacher within certain ranges of experience may receive more than \$200 a year increase. If, therefore, under the regular school law the sight-saving class teacher is receiving an annual increase of \$200 a year, she cannot receive in addition the differential paid to teachers of sight-saving classes.

In the city of New York all sight-saving class teachers are paid according to the junior high school schedule. For those who have been in the service a comparatively short time this is a considerable increase over the regular grade teacher of the same experience. For teachers whose length of service and promotions would entitle them to this salary, there is no increase over the regular grade teacher's salary.

Table 17 does not take into account the special limitation just cited, so that some of the figures may be misleading.

TABLE 17

SALARIES OF SIGHT-SAVING CLASS TEACHERS AS COMPARED WITH
SALARIES PAID TO TEACHERS IN THE NORMAL GRADES

Classification by salary increment	Sight-saving classes	
	<i>Number</i>	<i>Per Cent</i>
Sight-saving class teacher receives:		
Same salary as normal grade teacher	36	10.7
Higher salary than normal grade teacher amounting to:		
\$50 or \$60 per year	35	10.4
\$100 per year	41	12.2
\$150 per year	64	19.1
\$200 per year	22	6.6
\$300 per year	16	4.8
From \$50 to \$192 per year	32	9.6
From \$100 to \$300 per year	1	0.3
From \$100 to \$400 per year	5	1.5
From \$0 to \$686 per year	79	23.6
Amount not specified	4	1.2
<i>Total classes for which information is available</i>	335	100.0

SPECIAL PROBLEMS

Placement of Children With More Than One Handicap

The problems of educating children with seriously defective vision are difficult of solution, but they are further complicated where there is an added handicap. It is generally conceded that the placement of children so handicapped should be determined by the greater disability. Where the second handicap is subnormal mentality, there is no question but that this is the greater, therefore, it would seem reasonable that such children should be placed in a class for the mentally subnormal.

Difficulties immediately arise. The teachers of such classes often do not understand the educational adjustments necessary for a partially seeing child. In addition, much of the eye work taken up in these classes may prove harmful to the sight of a partially seeing child. Naturally, similar difficulties would arise in regard to mentally deficient children who have the additional handicap of deafness or orthopedic disabilities. An underlying cause, such as syphilis, may show many manifestations in the same individual. But these difficulties do not alter the decision. The child should be taught as a mentally deficient pupil, and as much help as possible be given to him to overcome the other handicaps.

A tremendous responsibility is placed on the teacher of a mentally deficient group, entailing special preparation to enable her to deal educationally with all types of handicaps. The problem, however, is not so hopeless of solution as it at first appears. Its very recognition is a step in the right direction. This has already resulted in the establishment of a department of special education in some teacher-training institutions already mentioned, in which opportunity is given to those who have had considerable experience in teaching, for a basic all-round training capable of dealing with both mental and physical handicaps. In this way, a teacher having experience with the normal group and able to devote one or two years to training for specialized work may have the

opportunity of training for teaching the mentally handicapped, the blind, the visually handicapped, the deaf, the hard of hearing, and the crippled. Provided she has the equipment necessary for each group, it may be possible for her to meet the individual needs.

Every possible assistance should be given by teachers of physically handicapped groups to those already conducting classes for the mentally subnormal who must accept children with other handicaps. A teacher of a sight-saving class should cooperate to the fullest extent with a teacher of a subnormal group in which there is a partially seeing child. The same equipment that is provided for the children in the sight-saving class should be made available for such a child when he is in the class for the mentally subnormal. The sight-saving class teacher should explain the use of such material, not only in general but as adapted to the particular type of eye difficulty by which the child is handicapped, and should, in addition, give special attention to the forms of hand-work which the child can undertake without increasing the eye difficulty.

Some mentally subnormal children are still found in sight-saving classes, as the object of these classes has been greatly misunderstood, even by educators, and in many early instances mental ability was not thought of importance in considering candidates for sight-saving classes.

Too much weight should not be given to the figures in Table 18, since the group available for study, composed of only 970 pupils, may not be representative of the group as a whole.

As a better understanding of the aim of sight-saving classes is gained, requirements for entrance should stipulate that candidates for sight-saving classes shall be of normal mentality. This is the case in some of the more recent state laws providing for the education of partially seeing children.

When there is no certainty of subnormal mentality, however, a backward child with serious eye condition should have every opportunity in a sight-saving class to prove whether or not his retardation may be due to eye condi-

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tions. The reason for this is that no satisfactory mental tests have been arranged which are adapted to the partially seeing child, although various attempts have been made. Also, mental retardation may be due to the fact that in the regular grade the partially seeing child has not had the educa-

TABLE 18

DISTRIBUTION OF SIGHT-SAVING CLASS PUPILS BY INTELLIGENCE QUOTIENTS

Classification	I.Q. group	Sight-saving class pupils having specified I.Q.'s		Percentage distribution by I.Q.'s of a standard group of children
		Number	Per cent of total	
Feeble-minded.....	Below 0 70	94	9.7	1
Borderline, sometimes dull, often feeble-minded.	0 70 to 0 79	169	17.4	5
Dull, rarely feeble-minded	0 80 to 0 89	245	25.3	14
Normal or average	0 90 to 1 09	373	38.4	60
Superior	1 10 to 1 19	63	6.5	14
Very superior, genius or near genius	1.20 or above	26	2.7	6
<i>Total</i>		970	100.0	100.0

Notes: Figures for sight-saving class pupils are from E. T. Myers' survey data. Mental tests were not available for all children.

Percentages for the standard group are from Woodworth, Robert S., *Psychology*, (rev. ed.) New York, Henry Holt & Co., 1929, p. 36.

tional media necessary for his eyes to send a correct impression to the brain. Every efficient sight-saving class teacher will give a child, about whose mental ability there is any question, sufficient time to justify his right to remain in the sight-saving class or to prove his mental disability. When a child proves incapable, from a mental standpoint, of successfully carrying the curriculum, he should be transferred to a class for the mentally deficient, not only for his own good but for the good of the rest of the children in the sight-saving class.

A physical handicap, such as seriously defective vision, affects the well-being of a child in quite a different way from a mental handicap. It interferes to a certain extent with his work and his play and often with his accomplishments, but

it does not affect his relationships to his fellow beings. He is a social being, reacting in much the same way to his environment as they. It is evident, therefore, that the same mental status should obtain in sight-saving classes as in regular grades.

In all the various groups the greatest good to the greatest number must be considered. This is being more and more realized. The mentally unfit were not segregated at first from the mentally fit because of the benefit they would gain. Segregation was made because of the retardation to the larger group. In many cases, the point of view was that the mentally unfit formed a useless group and all that could be hoped for was to keep them as happy as possible. People with more foresight soon began to realize the potential possibilities of some of those included among the mentally deficient and to urge training necessary to make the greatest use of these possibilities. This has led to the development of what was at first considered an educational waste product into by-products of such worth that most unskilled labor would now be at a loss to carry on without them.

In the same way, sight-saving class children were often considered an educational waste in the school system, but, given the media and the time for individual instruction, these classes began to justify, although along totally different lines, their right to existence.

Confusion of the two groups, the mentally deficient and the physically handicapped, is a detriment to both groups. In the early days of sight-saving classes, in some cities, it was not at all uncommon to find such a misunderstanding of the aims that some of these classes were made dumping grounds for any children who did not fit into the regular school grades. Even at the present day a disciplinary case, or even an epileptic, is occasionally found in these classes, despite the efforts of the teacher, because the idea persists that, since the teacher has a much smaller number of children than has the regular grade teacher, she has the time and energy to devote to cases of this kind. The almost inevitable result is that such cases take most of her time and attention, while

the children for whom the classes were intended are deprived of their due proportion.

There are other reasons why mentally deficient children should not be placed in sight-saving classes. In the cooperative plan used by a majority of sight-saving classes, in which the pupils go into the regular grade for all activities not requiring close use of the eyes, they are able to participate with their normally seeing companions. Mentally deficient children cannot have the same participation, having been removed from the regular grade because they have been a cause of retardation to regular grade pupils. If they are placed in sight-saving classes, the arrangement of having them go back into the regular grade for oral work justifies the teacher in feeling that the same condition for which they were originally removed still exists.

It would seem that although there are many difficulties in the way, the only solution for the education of children having the double handicap of deficient mentality and serious eye condition is to place them in a class for the mentally deficient and there give them all advantages possible to prevent the eye condition from becoming worse.

Where there are two physical handicaps, such as seriously defective vision and seriously defective hearing, it is a most difficult thing to decide which is the greater handicap, and the placement is a problem by no means easy of solution.

In the case of a child with seriously defective vision who is totally deaf, it would seem as though the total inability of one of the senses to function would be the greater handicap and that such children should be placed in schools or classes for the deaf and should there receive all advantages possible to save their sight. In cases, however, of seriously defective vision and seriously defective hearing, much more research work will have to be undertaken before any reasonable conclusion can be reached. From the very meager data available no conclusions can be drawn.

Follow-up Work After Pupils Leave School

A careful system of follow-up is necessary to enable educational authorities to estimate the value of sight-saving classes and to judge whether the principles of eye care taught therein are followed after the pupil leaves the class.

Reports from teachers and supervisors covering 334 of these classes indicate that the matter has, in the majority of cases, received some consideration, however inadequate. Some effort at follow-up has been made in 200 classes; plans for follow-up are in process of development in 4; in 130 no follow-up has been attempted. In the largest group, that composed of 126 classes, the sight-saving class teacher keeps up personal interest. While this is praiseworthy, it places altogether too much responsibility upon a teacher who has her hands full in caring for her own group. The method is too haphazard to be effective. In 14 classes, teachers continue supervision of children who have been returned to the regular grade. This effort might well come within the scope of the sight-saving class teacher's activities if the child in question has been placed in a regular grade of the same school, as it is most advisable for her to consult with the ophthalmologist to see if the child is holding his own under the different conditions, or if his sight is being affected. It would seem, however, that so far as other children are concerned, this work would lie in the province of the school nurse, where it is possible for her to add to her already arduous duties. The work might also be undertaken by the visiting teacher. In all cases, however, consultation with the ophthalmologist is necessary. Some pupils have been so thoroughly imbued with the responsibility of caring for their eyes that they voluntarily return from time to time for advice and help.

Transportation

In all forms of special education the question of the transportation of pupils is a serious one, and transportation for sight-saving class pupils is no exception. An extreme example of the difficulty has already been cited in connection

with the county class at Oak Harbor, Ohio, but this example, also, proves how such difficulties can be overcome.

Where the distance is too great to permit sight-saving class children to walk to school, car or general bus lines are the most frequently used. In nearly all cases the board of education of the city or district pays the carfare. Parents are often afraid to allow very young children to travel alone owing to the traffic dangers. The solution to this part of the problem may be found in having an older brother or sister transferred to the same school, in which case the board of education pays the carfare for both. Where it is impossible for any member of the family to accompany the young child, it may be necessary to hire a guide. Sometimes a woman is selected who meets the children from any one district in an allotted place and serves as their guide to and from school. In other cases fellow pupils are selected. Where possible, parents are expected to pay for this guide service; otherwise the board of education or some civic organization assumes this financial responsibility.

In some places regular school bus service is used, but, as children come from various directions, this service, if adequate, is likely to be very costly. In addition, great care has to be taken in the selection of bus drivers. In Los Angeles, buses are supplied by the board of education and college students are selected as drivers. This plan obviates one great difficulty, the children do not arrive at school late, because the college students must themselves be on time for their own classes.

In one city, a very complicated system is necessary. Children attending sight-saving classes use the same buses as do crippled children. Both groups are transported in these buses to the central school for the crippled. The sight-saving class children are then transferred to buses that take them to the various sight-saving classes. These arrangements require a great deal of travel for some of the children and much loss of time. Not only do they have to start much earlier than would otherwise be necessary, but they are almost invariably late in reaching their school.

The establishment of a sufficient number of classes to meet the needs of a community will in time be of help in solving the problems of transportation. Under present conditions it would seem that no blanket plan can be laid down that could possibly meet all the varying conditions and that each community will have to work out its transportation problem according to its own needs and resources.

The cost of transportation differs widely even in cities in the same state. Records for places having both braille and sight-saving classes do not differentiate between transportation costs of the two groups, and it is therefore impossible to compare these with transportation costs in cities having only the sight-saving class group. It is sufficient to mention that in one state alone, transportation costs run from \$12.42 to \$104.63 per capita for the school year.

Lunches

Serious eye difficulties are often symptoms of poor general health conditions, therefore, it is essential to keep the general health of children with eye difficulties as nearly normal as possible. More attention is being given to an adequate and well-balanced food supply than ever before. For children with any physical handicap, it is even more necessary than for physically normal children that food values be considered.

Since the majority of sight-saving class pupils attend schools at a distance from their homes, it is not possible for them to return home for lunch, and the lunch problem becomes more or less of a school matter. This does not mean that school authorities should be expected to provide lunches for all sight-saving class children, but, rather, that some arrangement should be made by which these children will have at least one hot dish at noon.

Where there is provision in the building for lunches for all children, such as a school cafeteria, no problem is presented, except such as may arise in relation to any child whose parents cannot provide luncheon. In such a case the

sight-saving class child would share in any provision made for regular grade children. Should no cafeteria exist, the problem becomes a special one, and the sight-saving class teacher must have recourse to classroom arrangements; the equipment necessary for preparing very simple luncheon dishes is usually included in the general equipment. In some instances, civic organizations undertake to provide equipment and the food necessary for indigent children. The preparation of the food is considered a part of the training in household economics, and both girls and boys share in the actual work, which is done expeditiously so that all the children may spend as much of the lunch hour as possible out of doors.

Class Hours

In the majority of sight-saving classes the regular school hours of the community are adhered to. Where buses are used for transportation it is sometimes necessary to shorten the school day; in a very few places the school day is lengthened, in consideration of the fact that some partially seeing children take longer to do their work than the normally seeing. Each community usually decides upon the best methods for meeting the particular problem presented.

APPRAISAL OF RESULTS

General, Social, and Psychological

It would seem almost unnecessary to have to justify, in these United States, the cost of the education of any child who is educable. Humanitarianism alone would seem a sufficient justification. Yet it must be remembered that the state is responsible to the taxpayers for the use of public moneys and that in consequence the state tends to look upon all education as an investment that will pay justifiable dividends.

The object in educating partially seeing children is the same as in the education of any group—to prevent illiteracy and so to develop the innate powers of the individual that he will not become a liability to the state but an asset of the

greatest possible value. This aspect of education is being demonstrated more and more by the method of individual instruction that is being emphasized in advanced school systems, by which a child is developed along the line for which he has the greatest ability. To give a partially seeing child an even chance with the normally seeing to become an asset to the state, it is necessary to provide for him the opportunity to overcome his handicap. In order to do this, such educational facilities must be put at his command as will permit him to develop along the line of his greatest strength, while his weakness, in so far as this is possible, is prevented from becoming any greater.

It is obvious that such facilities cost more than those provided for the normally seeing. If by providing them the state is enabled to change potential liabilities into actual assets, no further justification is necessary.

It must always be borne in mind, however, that this extra outlay is for the purpose of providing an even chance, and that extra dividends cannot be expected from the individual child for whom the outlay is made. There are, however, by-products resulting from this extra expenditure. Where an actual attempt is made to educate a partially seeing child in the regular grade, it is evident that if he is to make progress he must be given more of the teacher's time and energy than is his due proportion. In a class of thirty children, each child is expected to receive one-thirtieth of the teaching service available. If, in order to make progress, a partially seeing child requires one-tenth of this service, the twenty-nine other children are losing a proportionate amount. Removing such a child from the classroom for those subjects in which he requires this extra amount of time, and returning him for those subjects in which he can compete on the same basis as the other children, is to give them, as well as him, opportunity for greater development.

The most important justification, however, is psychological. A child suffering from any handicap is likely to develop complexes and inhibitions arising directly out of the handicap. If, in addition, he develops a new set of complexes

and inhibitions arising from failure, he becomes doubly handicapped. A child who becomes a chronic grade repeater, because of the lack of time, energy and understanding on the part of the teacher, and because of a lack of the educational media through which educational processes may be made intelligible to him, may develop into a sullen, a shy, or an extremely troublesome member of society. He may even, in extreme cases, develop anti-social habits that tend to disrupt social equilibrium and which, carried to the extreme, may result in actual crime against the state, in which case the last cost would be far greater than the first.

A further justification may be found by reviewing the reports of a number of pupils who have left sight-saving classes and who are engaged in gainful occupations (see Table 19).

Rates of Promotion

It is practically impossible to give more than an opinion in regard to rates of promotion in sight-saving classes because of the various factors involved. It must be taken into consideration that when a child enters a sight-saving class he is often retarded; in the regular grade the educational media were not suited to his needs and in the majority of cases the teacher had not sufficient time, or indeed the training, to give him the necessary help.

According to the system of grading in a very large proportion of schools, a child may be accounted a second grade pupil because he can accomplish only second grade work in certain subjects that require close use of the eyes, such as reading and spelling, although he may be able to do work of a much higher grade in subjects requiring good mentality and reasoning power, but no close use of the eyes. Given the educational media and the individual teaching, he may make such rapid progress as to seem almost phenomenal when compared with the second grade child in the regular class, and his rate of promotion be proportionately higher.

It must be borne in mind that, although a sight-saving class child has the advantages of individual teaching and

TABLE 19

CLASSIFIED LIST OF OCCUPATIONS WHICH SIGHT-SAVING CLASS PUPILS HAVE
UNDERTAKEN SHOWING GRADE ATTAINED IN SCHOOL
AND WHETHER SELF-SUPPORTING

Occupation Group	Occupations in which some cases were reported as self-supporting who were graduates of:			
	Sr. High	Jr. High	Elem. School	Not Re- ported
Trade				
Proprietors and managers.....	X	—	—	—
Salespeople, cashiers, etc.....	—	X	X	X
Shippers, wrappers, packers.....	—	X	X	X
Garage and oil station helpers.....	X	X	X	—
Delivery and messenger service.....	—	X	X	X
Office work				
Clerks.....	X	—	—	—
Secretaries and typists.....	—	X	—	—
Domestic and personal service				
Beauty parlor operative.....	—	X	—	—
Housemaid and mother's helper.....	—	X	X	X
Child's nurse.....	X	X	—	—
Attendant in institution.....	—	X	—	—
Attendant in dentist's office.....	—	—	—	—
Office cleaner and janitor.....	—	X	X	—
Waitress and cafeteria helper.....	X	X	X	—
Agriculture				
Forestry.....	X	—	—	—
Poultry farming.....	—	—	—	X
Fruit picking.....	—	—	—	X
Creamery.....	—	—	X	—
Factory				
Nickel plating.....	X	X	—	—
Spooling silk.....	—	—	—	X
Bottle capping.....	—	X	—	—
Machine shop worker.....	—	X	—	—
Presser—clothing.....	—	X	—	—
Unspecified.....	—	X	X	X
Hand industries				
Cabinet worker and carpenter.....	—	—	X	—
Radio repair.....	—	—	X	—
Auto mechanic.....	—	—	X	—
Tile setter.....	—	—	X	—
Chair caner.....	—	—	—	—
Assembler, artificial flowers.....	—	—	—	—
Cleaning and installing furnaces.....	—	X	—	—
Transportation				
R. R. yard worker.....	—	—	X	—
Transporting cattle to stock yard.....	—	X	—	—
Telephone operator.....	—	X	—	—
Elevator operator.....	—	X	X	—
Road making.....	—	—	X	—
Train caller.....	X	—	—	—
Professional				
Musician.....	—	—	X	—
Trained nurse.....	X	—	—	—
Social worker.....	X	—	—	—
Pharmacist.....	X	—	—	—
Miscellaneous				
Fisherman.....	—	X	X	—
Boatman.....	—	—	—	—
Navy.....	—	—	—	X
Bowling alley.....	—	—	—	—
Clerk—unspecified.....	—	—	X	—

educational facilities suited to his needs, he is shown no favor in the matter of rating. In all systems where the cooperative method is used, the rating is done by the regular grade teacher and not by the special teacher and is given on precisely the same basis as that applied to the normally seeing members of the same grade.

With the exception of a very small group for which figures are available, information on rates of promotion is based upon opinions of supervisors and teachers rather than upon actual data. In 53.2 per cent of the 333 sight-saving classes reported upon, the rate of promotion is thought to be higher than that in regular grades. In 41.1 per cent it is reported as the same. In only 0.3 per cent it is definitely thought to be lower.

A better method of computing results would be by a comparison of rates of promotion before and after children enter sight-saving classes. The group studied intensively, comprising only 356 children, is altogether too small to warrant general conclusions. However, anyone having an intimate knowledge of sight-saving classes would doubtless feel that the percentages shown in Table 20 and Chart X are far too conservative.

TABLE 20

RATES OF PROMOTION OF PUPILS BEFORE ENTERING SIGHT-SAVING CLASSES
COMPARED WITH RATE DURING SIGHT-SAVING CLASS PERIOD

	Before entering sight-saving class	In sight- saving class
Number of promotion opportunities.....	1,731	2,173
Number of promotions.....	1,276	1,978
	<i>Per cent</i>	<i>Per cent</i>
Promotion rates.....	73.7	91.0
Per cent of improvement.....	—	23.5
Number of children for whom records are available	356	356

Note: Figures are from E. T. Myers' survey data. Information on this point is not available for the entire group of pupils included in his survey.

Improvement in Eye Conditions

It is important to remember that when children are placed in sight-saving classes this does not mean that they must necessarily remain there. They may be returned to regular grade work if an improvement in eye condition war-

Promotion Rates

Key:

○ Promotion

● Failure

Partially seeing pupils

While in regular grades—73.7%



While in sight-saving class—91.0%



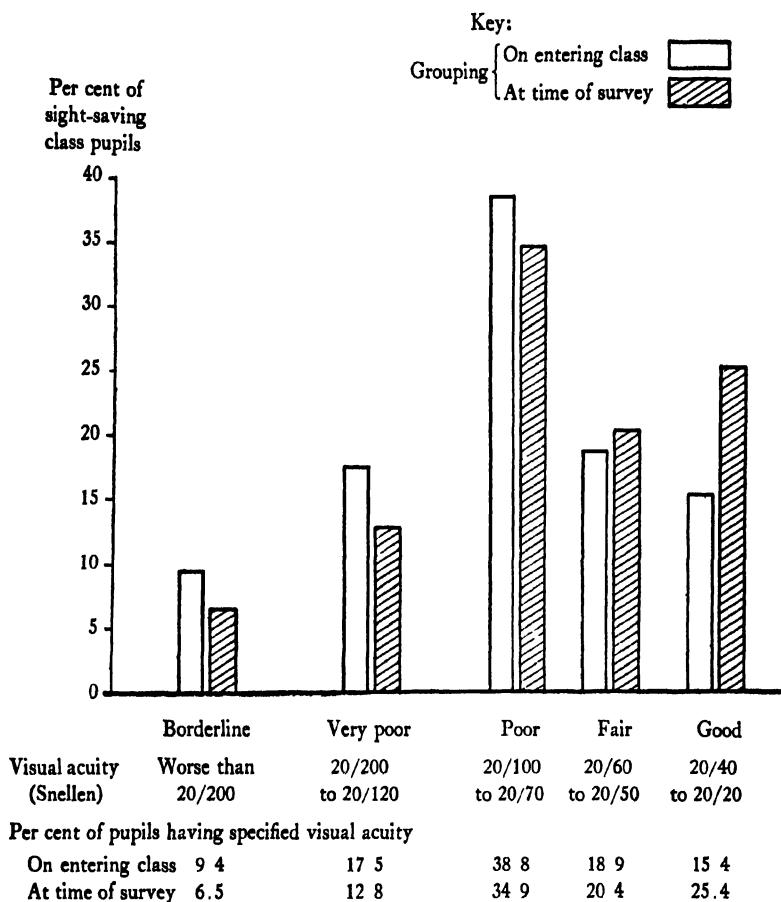
CHART X. INCREASED CHANCE OF PROMOTION FOR PARTIALLY SEEING PUPILS AFTER ENTERING SIGHT-SAVING CLASS

rants this transfer. Chart XI shows the improvement in visual acuity that occurred after children had been placed in sight-saving classes.

The greatest improvement is seen in cases of eye disease which are the result of general poor health. These cases raise the percentage of sight-saving class children able to return to regular grades. However, it must be borne in mind that scientific accuracy of figures cannot be expected until there is a more uniform basis of admission into classes. Upon reviewing Table 21, it seems very doubtful that over 20 per cent of the children in any one sight-saving class could, in any instance, be returned to the regular grades, if only those who were really candidates for such classes had been admitted. Various mistakes are made, especially when classes are being established in new sections and those making the decision as to candidates are somewhat doubtful which children should be included. In many sight-saving classes there have been placed one-eyed children who have

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normal vision in the good eye. Admission to such classes is regularly determined by the sight of the better eye, there-



The position of pairs of bars on base line indicates the approximation percentage of visual efficiency.

CHART XI. DISTRIBUTION OF SIGHT-SAVING CLASS PUPILS BY DEGREE OF VISUAL ACUITY (BETTER EYE) AT TIME OF ENTERING CLASS AND LATER AT TIME OF SURVEY

fore, one-eyed children with one normal eye should never be placed in these classes. Such a mistake may readily account for the very high percentage of returns made to the

regular grades when the error in admitting them is discovered.

TABLE 21

PER CENT OF SIGHT-SAVING CLASS PUPILS ABLE TO RETURN TO NORMAL GRADES BECAUSE OF IMPROVEMENT IN EYE CONDITION

Per cent Per cent of pupils able to return to normal grades because of improved eye condition	Teachers reporting Number	Classes involved Number
0 to 2.....	9	155
3 to 5.....	6	18
6 to 10.....	14	46
11 to 20.....	7	21
Over 20.....	2	3
Total number for which information is available..	38	243

Estimated per cent of pupils returned to normal grades because of improved eye conditions for all classes..... 4.7

Notes: Figures are based on *approximate* percentages supplied by supervisors and teachers.

The estimated percentage for all classes is a weighted average based on the number of pupils involved.

Table 21 taken as a whole, with an estimated average of 4.7 per cent of returns to the regular grades, indicates the excellent service that classes are giving in making it possible for these children not only to return to the regular grades, but to do so without loss of time or interest, as might readily occur had this specialized form of education not been provided.

SUMMARY

The Problem. To make education possible, without injury to the sight or to the general health, for two groups of partially seeing children—those who, because of progressive eye difficulties, should not use the ordinary school equipment, and those who, because of low vision, cannot do so.

Findings. Sight-saving classes offer the best method yet developed of educating partially seeing children. Candidates for these classes are pupils having a visual acuity between 20/70 and 20/200 in the better eye after correction or treatment, or who have progressive eye difficulties. The placement of border-line cases is decided according to the

possibilities of the individual. The placement of those with more than one handicap is determined by the major difficulty.

It is generally conceded that all pupils placed in sight-saving classes shall have normal mentality. If, however, there is any probability that a child's retardation is due to seriously defective vision, he is placed in a sight-saving class and given opportunity to prove his mental ability to carry on the work.

The most conservative estimate of the number of children needing education in sight-saving classes is one child in 1,000 of the school population; however, in those states that have had the most experience in this work, the generally accepted ratio is one in 500. Taking this as a basis of computation, over 50,000 children must be cared for.

January 1, 1930, there were 350 sight-saving classes in the United States, representing 95 cities or towns in 21 states. These provide for less than 5,000 children.

Since 70 per cent of the population lives in communities of less than 30,000, educating rural and semi-rural partially seeing children constitutes the major portion of the problem.

Of the 350 classes established, 348 are in cities and two in counties, demonstrating what can be done for partially seeing urban and semi-urban children. In rural communities little has been accomplished for such children even as a demonstration.

To some extent junior and senior high school opportunities are being offered for partially seeing pupils, ranging from the establishment of actual classes to providing advisers and student readers. In altogether too many communities no provisions are made.

So far as the physical environment of the school is concerned, there is little difference between ideal conditions for the normally seeing child and the partially seeing. In both groups these are often far from ideal.

The same educational standards and the same curricula apply to both groups with the exception that changes are made in the method of instructing partially seeing children in subjects that may otherwise prove harmful to eyes that

are not normal. The chief differentiation between the groups is in the special ophthalmological care provided for partially seeing children and in the educational media, such as books in large type, typewriters with large type, heavy lead pencils, maps without detail, and other material that may be used without eye fatigue by the partially seeing.

Adequate and efficient ophthalmological service is essential. In only 50 per cent of these classes is this service regularly provided, and even in these it is often far from adequate.

Administrative and pedagogic service is likewise most important. In 21 cities these classes are supervised by a special sight-saving class supervisor; in 34 by a supervisor of special classes; in the remaining cities such classes have no special supervision.

The teaching personnel is composed of a group having in the main good educational foundations; a fairly high percentage of the teachers is specially trained. Teacher-training institutions are gradually making training possible.

Two methods of conducting sight-saving classes are used: in one, the children are segregated, and in the other, called the cooperative plan, they take all work requiring close use of the eyes in the special class and join their normally seeing companions for other activities. The second method is followed by 288 of the 350 classes; in 18 additional classes arrangements are made for some cooperative work. One city, Cleveland, places children with static low vision and those having progressive eye difficulties in separate classes, wherever possible.

Since the number of partially seeing children is small, several grades must sometimes be taught by one teacher. When not more than four grades are represented, a teacher can care for 16 children, although a smaller number may be desirable since eye conditions must always be borne in mind and the limited variety of books and other material in large type, especially for junior and senior high school pupils, adds a great burden to the work of the teacher. A survey made of the 350 classes shows that the average number of grades

taught is 6 and the average number of pupils to a grade is 13.

Fourteen states have assumed their obligation for the education of partially seeing children by enacting legislation and providing financial assistance. It is noteworthy that 94.5 per cent of all sight-saving classes have been established in these states. Three methods of giving financial aid are in use: the appropriation of a per capita amount; a general sum appropriated by the legislature, an appropriation to cover a part of the teacher's salary. New York State has a method known as an equalization method by which the same appropriation is made for a minimum of 10 children in special classes as is given for a minimum of 27 children in regular grades.

The per capita appropriation has proved best since costs may include equipment, services of student readers and other things.

The per capita cost of educating children in sight-saving classes is usually from \$200 to \$250 a year, an average excess of \$170 over the cost of educating a regular grade pupil. The range of per capita cost of educating a sight-saving class child is from \$132 to \$331. The justification of this cost is that, given opportunity, these children usually become assets rather than liabilities to the community, that there is a decided increase in promotion rates, that approximately 4.50 per cent of sight-saving class pupils are able to return to regular grades.

Possibly the most perplexing question is how the partially seeing are to earn a living. Sight-saving class supervisors and teachers emphasize vocational guidance in the school program, but there is little service by vocational bureaus in the selection of occupation and in placement. Such service, to be adequate, must go hand in hand with vocational training. Only two cities, Cleveland and Detroit, offer even junior high school vocational training for partially seeing pupils.

RECOMMENDATIONS

GENERAL

1. Uniform standards for admission to sight-saving classes.
2. Provisions by health and educational authorities for the best ophthalmological, supervisory and teaching service.
3. Provisions for extending this type of education in general. Service in particular to rural partially seeing children by the establishment of more county classes and arrangements for individual instruction where necessary.
4. Widespread educational work to clear away the habit of confusing partially seeing children with blind children.
5. Provisions for the education of partially seeing children above elementary school age in vocational and academic junior and senior high schools.
6. Legislative and financial assistance by all states not having such, and improvement in existing legislation where this is necessary.
7. Extension of vocational guidance and placement service by cooperation between the educational authorities and the federal-state rehabilitation service.

RESEARCH

8. Research in making mental tests available for partially seeing children by adapting standard tests to their use.
9. Research on educational media for sight-saving classes, especially on the size and kind of type best suited to the needs of partially seeing children.
10. Research in the means of earning a living.
11. Research to discover the causes of eye difficulties.

ULTIMATE AIM

12. Reduction in the number of pupils requiring this special type of education by:

Greater care of the eyes of the preschool child.

More extended medical service for school children.

Improvement in school plants to produce the best environmental conditions.

Cooperative effort—medical, educational and social
—to eliminate the causative factors of eye difficulties.

APPENDIX

In the following group of tables and charts will be found more detailed summaries supplementing the data already presented in the body of the report.

It is felt that the series showing the nature of eye defects found among sight-saving pupils might be of interest to ophthalmologists and others who are chiefly concerned with treatment and prevention. The figures are from Dr. Edward T. Myers' survey data. Space does not permit an analytical study of these data here. However, it should be pointed out that conclusions should not be drawn from the material without a thorough understanding of the sources of information and its limitations.

RATING OF SIGHT-SAVING CLASSES

In communities in which there is but one sight-saving class and no adequate supervision, the teacher is often at a loss to evaluate results. A score card is here suggested as a help in such undertaking (Table IV.)

TABLE I

CITIES IN WHICH SIGHT-SAVING CLASSES HAVE BEEN ESTABLISHED. LISTED BY RATIO OF SIGHT-SAVING PUPILS TO TOTAL PUPILS ENROLLED

City	Ratio of Sight-Saving Pupils to Total Pupils	City	Ratio of Sight-Saving Pupils to Total Pupils
Fremont, Ohio.....	1 to 100	Albany, N. Y.....	1 to 672
Norwalk, Ohio.....	141	Syracuse, N. Y.....	677
Ypsilanti, Mich.....	159	Duluth, Minn.....	703
Grand Rapids, Mich.....	191	Pasadena, Cal.....	716
Middletown, Ohio.....	1 to 253	Boston, Mass.....	718
Cleveland Hts., Ohio.....	256	Brockton, Mass.....	748
Alhance, Ohio.....	264	Revere, Mass.....	1 to 763
Sandusky, Ohio.....	268	Lynn, Mass.....	771
Farmington, Conn.....	290	Minneapolis, Minn.....	781
Salem, Mass.....	313	Lowell, Mass.....	783
Springfield, Ohio.....	326	Des Moines, Ia.....	853
Hamilton, Ohio.....	344	Somerville, Mass.....	854
Muskegon, Mich.....	354	Richmond, Va.....	859
Barberton, Ohio.....	360	Canton, Ohio.....	864
Campbell, Ohio.....	363	Flint, Mich.....	884
Ashtabula, Ohio.....	377	New Orleans, La.....	1 to 888
Holyoke, Mass.....	383	Rochester, N. Y.....	935
Rock Island, Ill.....	386	Tacoma, Wash.....	942
Oak Harbor, Ohio.....	388	Buffalo, N. Y.....	1000
Chelsea, Mass.....	415	Jamestown, N. Y.....	1 to 1004
Jackson, Mich.....	416	Erie, Pa.....	1033
New Bedford, Mass.....	424	New Britain, Conn.....	1076
Lima, Ohio.....	450	Providence, R. I.....	1129
Toledo, Ohio.....	450	St. Louis, Mo.....	1140
Saginaw, Mich.....	463	New Haven, Conn.....	1218
Joliet, Ill.....	471	Columbus, Ohio.....	1 to 1281
Medford, Mass.....	492	Roanoke, Va.....	1281
Seattle, Wash.....	1 to 511	San Francisco, Cal.....	1376
Cleveland, Ohio.....	515	Gary, Ind.....	1377
Mansfield, Ohio.....	525	Worcester, Mass.....	1420
Hibbing, Minn.....	529	Norfolk, Va.....	1487
Mt. Vernon, N. Y.....	540	Newark, N. J.....	1 to 1509
Fall River, Mass.....	542	Akron, Ohio.....	1512
Paterson, N. J.....	558	Philadelphia, Pa.....	1531
Binghamton, N. Y.....	562	Springfield, Mass.....	1616
Newton, Mass.....	564	San Diego, Cal.....	1635
Cincinnati, Ohio.....	565	Milwaukee, Wis.....	1655
Coleraine, Minn.....	572	Chicago, Ill.....	1 to 1836
Warren, Ohio.....	576	Los Angeles, Cal.....	1997
Detroit, Mich.....	577	Baltimore, Md.....	1 to 2209
Lorain, Ohio.....	582	Jersey City, N. J.....	2224
Portsmouth, Ohio.....	582	Atlanta, Ga.....	2322
Highland Park, Mich.....	620	Omaha, Neb.....	2699
New York City.....	630	Kansas City, Mo.....	4322
St. Paul, Minn.....	644	Indianapolis, Ind.....	4343
Youngstown, Ohio.....	650		
Long Beach, Cal.....	653		
Dayton, Ohio.....	659		
South Bend, Ind.....	661		
Cambridge, Mass.....	670		

Notes: In computing ratios the enrolment of junior and senior high schools has been included only where there are sight-saving pupils actually enrolled in these grades.

Figures for school enrolment are for public day schools in the United States, 1927-1928.

Classes established in small towns sometimes serve the surrounding territory and in one or two instances, the county.

Where this arrangement has been reported, the ratios have been computed on the population of the territory covered.

TABLE II

CROSS CLASSIFICATION OF SIGHT-SAVING CLASSES BY NUMBER OF GRADES
TAUGHT AND NUMBER OF PUPILS ENROLLED

Classes with enrolment of:	Classes in which number of grades taught is:													Total Classes
	1	2	3	4	5	6	7	8	9	10	11	12	13	
1.....
2.....	..	1	..	..	..	..	..	..	..	..	..	..	..	1
3.....
4.....
5.....
6.....	1	..	..	..	..	..	..	..	..	..	..	1
7.....	4	2	..	1	..	..	..	..	..	..	7
8.....	1	6	4	2	..	..	..	..	..	..	..	13
9.....	1	1	8	5	1	1	..	..	..	..	..	17
10.....	2	5	5	9	5	2	..	..	..	..	..	28
11.....	..	2	2	7	10	9	8	4	2	..	..	..	..	44
12.....	..	1	4	7	10	15	6	4	1	..	..	..	..	48
13.....	1	1	1	5	..	2	2	2	1	..	1	..	..	16
14.....	3	6	8	3	6	2	1	..	..	..	..	29
15.....	..	1	1	3	7	7	4	5	3	..	..	..	..	31
16.....	1	..	..	4	5	6	2	3	1	2	..	24
17.....	..	1	..	2	1	2	2	3	2	2	..	..	..	15
18.....	..	1	..	1	2	7	3	6	2	..	3	1	..	26
19.....	1	2	2	1	2	..	5	4	..	..	17
20.....	1	1	1	4	4	2	1	1	1	1	17
21.....	1	..	..	1	..	2	..	2	..	..	6
22.....	1	..	..	..	..	..	..	..	1	..	2
23.....	1	..	..	..	..	1
24.....	1	1
25.....
26.....	1	1	..	..	..	..	2

Total—

Classes 1 8 17 51 60 68 49 42 20 11 12 5 2 346

Notes: Total excludes classes having more than one teacher.

Since the count of grades is intended to show the number of different class problems which the teacher must prepare, the two parts of a school year are counted separately where semi-annual promotions are indicated by the teacher; also, an ungraded pupil is an additional grade problem unless reported as working in grades in which there are some other children.

TABLE III

DISTRIBUTION OF SIGHT-SAVING CLASSES BY SIZE OF COMMUNITY IN WHICH THEY ARE ESTABLISHED, WITH FIGURES SHOWING NUMBER OF PUPILS TO WHOM CLASSES ARE AVAILABLE

	Size of community (population)			<i>Total</i>
	100,000	30,000 to 100,000	Under 30,000	
Sight-saving classes established				
<i>Number</i> of classes.....	303	31	16	350
<i>Per cent</i> of total classes..	86.6	8.8	4.6	100.0
Pupils enrolled (all classes)				
<i>Total</i> pupils enrolled. . .	5,875,393	1,690,335	17,613,968	25,179,696
<i>Per cent</i> of total pupils..	23.3	6.7	70.0	100.0
<i>Number</i> in cities having sight-saving classes. . .	4,695,520	286,512	74,019	5,056,051
<i>Number</i> in cities having no sight-saving classes.	1,179,873	1,403,823	17,539,949	20,123,645
<i>Per cent</i> in cities having sight-saving classes. . .	80.0	16.9	0.4	20.0
<i>Per cent</i> in cities having no sight-saving classes.	20.0	83.1	99.6	80.0

Notes: Cities are grouped by size of population in 1928.

Enrolment figures are for the school year 1927-1928 and include public school pupils from kindergarten through the high school grades.

TABLE IV

SUGGESTED SCORE CARD FOR SIGHT-SAVING CLASSES

	Points	Total Points
<i>I. Eye care and training</i>		
a. Ophthalmological examination.....	20	
b. Sight-saving class teacher		
1. Knowledge of individual eye conditions.....	15	
2. Regular vision check.....	5	
c. Other teachers		
1. Adjustment for individuals.....	10	
d. Child		
1. Knowledge of own problem.....	10	
2. Cooperation.....	10	
e. Parents		
1. Cooperation.....	10	
f. Health education		
1. Good general course.....	10	
2. Special emphasis on eye.....	10	100
<i>II. Environment</i>		
a. Natural lighting		
1. Glass area.....	5	
2. Intensity.....	2	
3. Exposure.....	2	
4. Direction (unilateral lighting).....	2	
5. Diffusion (shades).....	2	
6. Absence of glare.....	2	15
b. Artificial lighting		
1. Intensity.....	3	
2. Type of luminaire.....	3	
3. Distribution.....	3	
4. Diffusion.....	2	
5. Absence of glare.....	2	
6. Maintenance.....	2	15
c. Walls, ceilings and woodwork		
1. Walls, color.....	2	
2. Ceilings, color.....	2	
3. Woodwork, color.....	2	
4. Maintenance.....	2	
5. Finish of all surfaces.....	2	10
d. Furnishings		
1. Seats and desks		
(a) Both adjustable.....	4	
(b) Color and finish.....	2	
(c) Arrangement for light.....	2	
2. Blackboards		
(a) Color and finish.....	2	
(b) Adequate blackboard space.....	2	
(c) Placement.....	2	
(d) Chalk.....	2	
3. Pictures, maps, and so forth		
(a) Size and type.....	2	
(b) Placement.....	2	20
e. Reading		
1. Type used.....	5	
2. Supply.....	3	
3. Restrictions.....	2	10
f. Writing		
1. Size and kind.....	4	
2. Paper.....	3	
3. Pens and pencils.....	3	10
g. Typewriter		
1. Size and kind of type.....	3	
2. System (touch).....	4	
3. Copy-holder.....	3	10
h. Hand work		
1. Eye rest.....	4	
2. Motivated.....	2	
3. Creative.....	2	
4. Adaptation to individual needs and conditions.....	2	10
		<u>100</u>

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TABLE V

DETAIL OF MOST IMPORTANT EYE DISEASES FOUND AMONG SIGHT-SAVING CLASS PUPILS AT TIME OF ENTERING CLASS

Eye disease	Pupils affected	
	Number	Per cent
<i>Diseases of cornea</i>	411	14.0
Corneal ulcers and opacities	300	10.2
Interstitial keratitis.	108	3.7
Keratitis, phlyctenular and unspecified.	29	1.0
<i>Diseases of lens</i>	304	10.4
Cataract	254	8.7
Aphakia 24, and dislocation of lens 34.	58	1.9
<i>Diseases of choroid and retina</i>	168	5.7
Choroiditis and retinitis.	122	4.2
Degeneration (incl. retinitis pigmentosa 12).	19	.6
Atrophy	16	.5
Other (coloboma 12, detached retina 7, hemorrhage 1)	20	.7
<i>Diseases of the optic nerve</i>	103	3.5
Optic nerve atrophy.	95	3.2
Optic neuritis and lowered function	8	.3
<i>Malformations</i>	115	3.9
Albinism	76	2.6
Arrested development	25	.9
Other (microphthalmus 10, and aniridia 6)	16	.5
<i>Diseases of iris and ciliary body</i>	39	1.3
(Including coloboma 19, synechia 14 and iritis or iridocyclitis 8)		
<i>Diseases of conjunctiva and lids</i>	38	1.3
Distichiasis, trichiasis, ptosis.	13	.4
Conjunctivitis (trachoma 7, follicular 2, eczematous and unspecified 8).	17	.6
Blepharitis	9	.3
<i>Glaucoma (incl. buphthalmos)</i>	21	.7
<i>Other diseases or conditions</i>	250	8.5
Blindness or enucleation of one eye.	114	3.9
Amblyopia (not otherwise specified)	92	3.1
Light perception only in one eye	40	1.4
Other (phthisis bulbi 6, injury 4, cancer 2, hemorrhage 2, iridectomy 1).	15	.5
<i>Total (excluding duplications)</i>	1238	42.2
<i>Total children included in survey</i>	2932	100.0

Note: Figures are from E. T. Myers' survey data.

SPECIAL EDUCATION

TABLE VI

CROSS CLASSIFICATION OF SIGHT-SAVING CLASS PUPILS BY
DISEASE OF EYE AND VISUAL ACUITY

Type of eye disease	Cases in which specified eye disease was associated with visual acuity			Total
	20/20 to 20/60 Number	20/70 to 20/100 Number	Worse than 20/100 Number	
Diseases of conjunctiva and lids.....	10	10	16	36
Diseases of cornea.....	104	139	107	350
Diseases of iris and ciliary body.....	4	11	16	31
Diseases of choroid and retina.....	43	49	51	143
Diseases of lens.....	38	85	130	253
Diseases of optic nerve.....	23	30	38	91
Glaucoma (including buphthalmos).....	4	6	10	20
Malformations.....	10	36	48	94
Other.....	67	89	74	230
Any disease of eye.....	256	390	413	1059
No disease of eye.....	639	606	248	1493
Total (excluding duplications) ...	895	996	661	2552

	Per cent	Per cent	Per cent	Per cent
Diseases of conjunctiva and lids.....	27.8	27.8	44.4	100.0
Diseases of cornea.....	29.7	39.7	30.6	100.0
Diseases of iris and ciliary body.....	12.9	35.5	51.6	100.0
Diseases of choroid and retina.....	30.1	34.3	35.6	100.0
Diseases of lens.....	15.0	33.6	51.4	100.0
Diseases of optic nerve.....	25.3	33.0	41.7	100.0
Glaucoma (including buphthalmos).....	—	—	—	—
Malformations.....	10.6	38.4	51.0	100.0
Other.....	29.1	38.7	32.2	100.0
Any disease of eye.....	24.1	36.9	39.0	100.0
No disease of eye.....	42.8	40.6	16.6	100.0
Total (excluding duplications) ...	35.1	39.0	25.9	100.0

Notes: Figures are from E. T. Myers' survey data. Cases in which either eye disease or visual acuity was not specified have been omitted from this table.

TABLE VII

CROSS CLASSIFICATION OF SIGHT-SAVING CLASS PUPILS BY DISEASE OF EYE AND REFRACTIVE ERROR

Type of eye disease	Cases in which specified disease was associated with:					
	Hyper- opia (Incl. H. A.)	Myopia (Incl. M. A.)	Astig- matism (All forms)	Any refrac- tive error	No refrac- tive error	Total (excl. dupli- cations)
	Number	Number	Number	Number	Number	Number
Diseases of conjunctiva and lids.....	5	7	6	14	24	38
Diseases of cornea....	28	100	73	137	274	411
Diseases of iris and ciliary body.....	4	7	6	11	28	39
Diseases of choroid and retina.....	16	53	23	69	99	168
Diseases of lens.....	38	18	22	59	245	304
Diseases of optic nerve	18	18	24	38	65	103
Glaucoma (including buphthalmos).....	—	5	1	5	16	21
Malformations.....	32	19	41	56	59	115
Other.....	64	26	48	97	153	250
Any disease of eye..	177	226	215	429	809	1238
No disease of eye...	536	896	877	1568	126	1694
Total (excl. dupli- cations).....	713	1122	1092	1997	935	2932
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
Diseases of conjunctiva and lids.....	13.2	18.4	15.8	36.8	63.2	100.0
Diseases of cornea....	6.8	24.3	17.8	33.3	66.7	100.0
Diseases of iris and ciliary body....	10.3	17.9	15.4	28.2	71.8	100.0
Diseases of choroid and retina.....	9.5	31.5	13.7	41.1	58.9	100.0
Diseases of lens....	12.5	5.9	7.2	19.4	80.6	100.0
Diseases of optic nerve	17.5	17.5	23.3	36.9	63.1	100.0
Glaucoma (including buphthalmos).....	—	—	—	—	—	—
Malformations.....	27.8	16.5	35.7	48.7	51.3	100.0
Other.....	25.6	10.4	19.2	38.8	61.2	100.0
Any disease of eye..	14.3	18.3	17.4	34.7	65.3	100.0
No disease of eye...	31.6	52.8	51.7	92.6	7.4	100.0
Total (excl. dupli- cations).....	24.3	38.3	37.3	68.1	31.9	100.0

Note: Figures are from E. T. Myers' survey data.

TABLE VIII

CROSS CLASSIFICATION OF SIGHT-SAVING CLASS PUPILS BY
REFRACTIVE ERROR AND VISUAL ACUITY

Type of refractive error	Cases in which specified refractive error was associated with visual acuity:			
	20/20 to 20/60 <i>Number</i>	20/70 to 20/100 <i>Number</i>	Worse than 20/100 <i>Number</i>	Total <i>Number</i>
Hyperopia (incl. H. A.).....	279	278	96	653
Myopia (incl. M. A.).....	380	395	211	986
Astigmatism (all forms).....	446	406	135	987
Any refractive error.....	<u>721</u>	<u>728</u>	<u>326</u>	<u>1775</u>
No refractive error.....	<u>174</u>	<u>268</u>	<u>335</u>	<u>777</u>
<i>Total</i>	895	996	661	2552

	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>
Hyperopia (incl. H. A.).....	42.7	42.6	14.7	100.0
Myopia (incl. M. A.).....	38.6	40.1	21.3	100.0
Astigmatism (all forms).....	45.2	41.1	13.7	100.0
Any refractive error.....	<u>40.6</u>	<u>41.0</u>	<u>18.4</u>	<u>100.0</u>
No refractive error.....	<u>22.4</u>	<u>34.5</u>	<u>43.1</u>	<u>100.0</u>
<i>Total</i>	35.1	39.0	25.9	100.0

Notes: Figures are from E. T. Myers' survey data. Cases in which either refractive error or visual acuity was not specified have been omitted from this table.

TABLE IX

DISTRIBUTION OF PUPILS ENTERING SIGHT-SAVING CLASSES AT EACH AGE BY TYPE OF EYE DISEASE

Type of eye disease	Number of pupils at each age (on entering class)										Not 14yrs + reported
	5 yrs.	6 yrs.	7 yrs.	8 yrs.	9 yrs.	10 yrs.	11 yrs.	12 yrs.	13 yrs.	14 yrs.	
Total	38	41	41	74	8	48	1	2	4	1	1
Conjunctiva or lids.....	38	41	41	74	8	48	1	2	4	1	1
Cornea.....	5	32	41	74	57	48	50	33	23	30	18
Iris and ciliary.....	0	5	3	6	9	2	2	3	1	6	2
Choroid and retina.....	168	0	23	28	18	21	16	13	11	9	10
Lens.....	304	5	60	44	38	34	36	12	12	15	11
Optic nerve.....	103	1	10	16	12	9	10	12	9	9	3
Glaucoma (incl. buphthalmos).....	21	1	3	4	1	3	0	1	1	2	1
Malformations.....	115	3	28	19	11	16	6	6	0	5	5
Other.....	250	5	36	37	22	35	36	15	16	12	13
None.....	1694	16	171	267	271	221	177	94	79	53	52
Total—All eye disease....	1238	18	137	177	147	147	133	87	66	74	55
Total pupils.....	2932	34	308	444	418	368	310	181	145	127	107

Type of eye disease	Percentage of pupils at each age (on entering class)										Not 14yrs + reported
	5 yrs.	6 yrs.	7 yrs.	8 yrs.	9 yrs.	10 yrs.	11 yrs.	12 yrs.	13 yrs.	14 yrs.	
Total	1.3	1.4	1.4	2.5	0.2	1.3	0.3	0.4	0.5	0.8	0.9
Conjunctiva or lids.....	14.0	14.7	14.7	15.1	13.6	13.0	16.1	18.2	15.9	23.6	16.8
Cornea.....	1.3	1.6	0.7	1.2	2.1	0.5	1.0	1.1	0.7	7.7	1.9
Iris and ciliary.....	5.7	6.2	5.2	5.7	4.3	5.7	5.2	7.2	7.6	7.1	9.3
Choroid and retina.....	10.4	11.7	13.5	9.0	9.1	9.2	11.6	7.2	8.3	11.8	10.3
Lens.....	3.5	2.9	2.7	3.3	2.9	2.5	3.2	6.6	6.2	7.1	2.8
Optic nerve.....	0.7	3.0	0.9	0.8	0.2	0.8	—	0.6	0.7	1.6	0.9
Glaucoma (incl. buphthalmos).....	3.9	8.8	4.3	3.3	2.6	4.4	1.9	3.3	—	3.9	4.7
Malformations.....	8.5	14.7	8.1	7.5	5.3	9.5	11.6	8.3	11.0	9.5	12.2
Other.....	57.8	47.1	60.1	59.8	64.8	60.1	57.2	52.0	54.4	41.7	48.6
Total—All eye disease....	42.2	52.9	44.5	40.2	35.2	39.9	42.8	48.0	45.6	58.3	51.4

Note: Figures are from E. T. Myers' survey data.

TABLE X
DISTRIBUTION OF PUPILS ENTERING SIGHT-SAVING CLASS AT EACH AGE BY TYPE OF REFRACTIVE ERROR

Type of refractive error	Number of pupils at each age (on entering class)													Not reported
	Total	5 yrs.	6 yrs.	7 yrs.	8 yrs.	9 yrs.	10 yrs.	11 yrs.	12 yrs.	13 yrs.	14 yrs.	15 yrs.	16 yrs.	
Hyperopia.....	226	3	31	23	45	36	27	31	11	9	3	7	7	
Myopia-progressive.....	233	—	25	34	28	32	29	31	18	17	8	11	11	
Myopia-unspec.....	338	4	33	46	83	60	54	57	22	16	25	14	14	
Hyperopic astigmatism.....	487	2	49	84	97	70	66	57	29	11	12	10	9	
Myop. astig. prog.....	137	2	14	21	26	23	11	12	3	10	6	12	9	
Myop. astig. unsp.....	364	3	36	68	49	67	50	28	19	18	13	13	13	
Mixed astigmatism.....	67	1	6	9	9	13	6	9	—	6	3	5	5	
Astigmatism unsp.....	37	—	4	3	8	5	6	5	2	3	—	1	1	
Other (combination and indefinite).....	58	—	8	13	6	7	3	10	6	1	3	—	—	
Nones.....	935	19	102	143	139	105	116	96	71	54	54	36	36	
Total—All refractive errors.....	1997	15	206	301	351	313	252	214	110	91	73	71	71	
Total—Pupils.....	2932	34	308	444	490	418	368	310	181	145	127	107	107	
Type of refractive error	Percentage of pupils at each age (on entering class)													Not reported
	Total	5 yrs.	6 yrs.	7 yrs.	8 yrs.	9 yrs.	10 yrs.	11 yrs.	12 yrs.	13 yrs.	14 yrs.	15 yrs.	16 yrs.	
Hyperopia.....	7.7	8.8	10.1	5.2	9.2	8.6	7.3	10.0	6.1	6.2	2.4	6.5	6.5	
Myopia-progressive.....	8.0	—	18.1	7.7	5.7	7.7	7.9	10.0	9.9	11.7	6.3	10.3	10.3	
Myopia-unspec.....	13.2	11.8	10.7	10.4	16.9	14.4	14.8	10.0	12.2	11.0	19.7	13.1	13.1	
Hyperopic astigmatism.....	16.6	5.9	15.9	18.9	19.8	16.7	17.9	18.4	16.0	7.6	9.4	9.4	9.4	
Myop. astig. prog.....	4.7	5.9	4.6	4.7	5.3	5.5	3.0	3.9	1.7	6.9	4.7	8.4	8.4	
Myop. astig. unsp.....	12.4	8.8	11.7	15.3	10.0	16.0	13.6	9.0	10.5	12.4	10.2	12.1	12.1	
Mixed astigmatism.....	2.3	2.9	1.9	2.0	1.9	3.1	1.6	2.9	—	4.1	2.4	4.7	4.7	
Astigmatism unsp.....	1.3	—	1.3	0.7	1.6	1.2	1.6	1.6	1.1	2.1	—	0.9	0.9	
Other (combination and indefinite).....	2.0	—	2.6	2.9	1.2	1.7	0.8	3.2	3.3	0.7	2.4	0.9	0.9	
None.....	31.8	55.9	33.1	32.2	28.4	25.1	31.5	31.0	39.2	37.3	42.5	33.7	33.7	
Total—All refractive errors.....	68.2	44.1	66.9	67.8	71.6	74.9	68.5	69.0	60.8	62.7	57.5	66.3	66.3	
Hyperopia (incl. h. astigmatism).....	24.3	14.7	26.0	24.1	29.0	25.3	25.2	28.4	22.1	13.8	11.8	15.9	15.9	
Myopia (incl. m. astigmatism).....	38.3	26.5	35.1	38.1	37.9	43.6	39.3	32.9	34.3	42.0	40.9	43.9	43.9	
Astigmatism (all forms).....	37.3	23.5	35.4	41.6	38.6	42.5	37.7	35.8	29.3	33.1	26.7	35.3	35.3	

Note: Figures are from E. T. Myers' survey data.

TABLE XI

DISTRIBUTION OF CHILDREN ENTERING SIGHT-SAVING CLASSES AT EACH AGE BY TYPE OF MUSCLE DISTURBANCE

Type of muscle disturbance	Number of pupils at each age (on entering class)										Not Reported
	Total	5 yrs.	6 yrs.	7 yrs.	8 yrs.	9 yrs.	10 yrs.	11 yrs.	12 yrs.	13 yrs.	14 yrs. +
Strabismus or squint.....	206	2	28	39	33	25	28	19	9	7	6
Heterophoria	4	—	—	1	1	1	1	—	—	—	—
Nystagmus	388	6	69	60	72	55	43	29	21	13	11
Strab and Nystag.	61	1	8	9	13	9	4	8	2	3	1
Paresis	2	1	—	1	—	—	—	—	—	—	—
Nystag. and paresis ..	1	—	—	1	—	—	—	—	—	—	—
No muscle disturbance	2270	24	203	333	371	328	292	254	149	212	109
Total—All muscle disturbances	662	10	105	111	119	90	76	56	32	23	18
Total pupils	2932	34	308	444	490	418	368	310	181	145	127

Type of muscle disturbance	Percentage of pupils at each age (on entering class)										Not Reported
	Total	5 yrs.	6 yrs.	7 yrs.	8 yrs.	9 yrs.	10 yrs.	11 yrs.	12 yrs.	13 yrs.	14 yrs. +
Strabismus or squint.....	7.4	5.9	9.1	8.8	6.7	6.0	7.6	6.1	5.0	4.8	4.7
Heterophoria	0.1	—	—	0.2	0.2	0.2	0.3	—	—	—	—
Nystagmus	13.3	17.7	22.4	13.5	14.7	13.2	11.7	9.4	11.6	9.0	8.7
Strab and Nystag.....	2.1	2.9	2.6	2.0	2.7	2.1	1.1	2.6	1.1	2.1	0.8
Paresis	0.1	2.9	—	0.2	—	—	—	—	—	—	—
Nystag. and paresis ..	0.0	—	—	0.2	—	—	—	—	—	—	—
No muscle disturbance.	77.4	70.6	65.9	75.1	75.7	78.5	79.3	81.9	82.3	84.1	85.8
Total—All muscle disturbances	22.6	29.4	34.1	24.9	24.3	21.5	20.7	13.1	17.7	15.9	14.2
Strabismus (total).....	9.1	8.8	11.7	10.8	9.4	8.1	8.7	8.7	6.1	6.9	5.5
Nystagmus (total).....	15.4	20.6	25.0	15.7	17.4	15.3	12.8	12.0	12.7	11.1	9.5

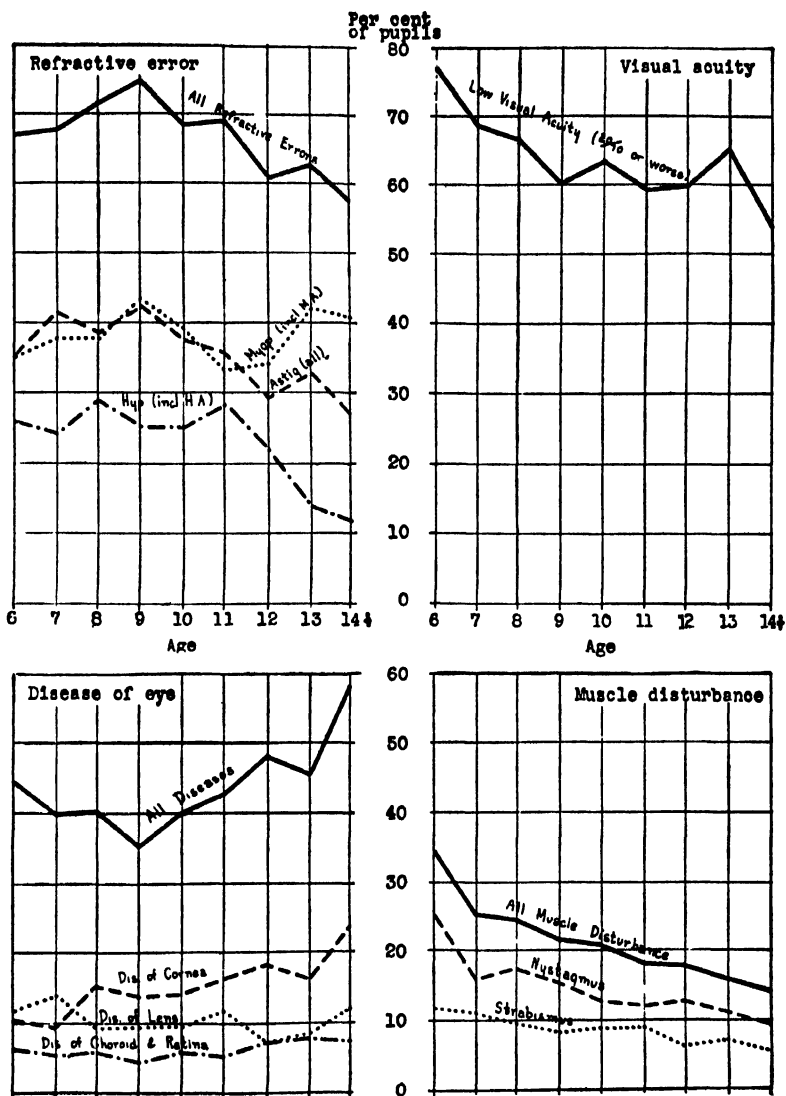
Note: Figures are from E. T. Myers' survey data.

TABLE XII
DISTRIBUTION OF CHILDREN ENTERING SIGHT-SAVING CLASSES AT EACH AGE, BY DEGREE OF VISUAL ACUITY

Degree of visual acuity	Number of pupils at each age (on entering class)											Not reported
	Total	5 yrs.	6 yrs.	7 yrs.	8 yrs.	9 yrs.	10 yrs.	11 yrs.	12 yrs.	13 yrs.	14 yrs.	
20/20	46	—	1	2	2	6	10	8	2	2	12	1
20/30	132	2	8	16	10	20	15	20	12	14	11	4
20/40	224	—	11	17	30	43	33	28	18	13	10	12
20/50	457	1	29	74	88	75	63	56	31	13	15	12
20/60	54	—	4	8	8	9	6	4	4	5	4	2
20/70	58	3	53	84	94	70	78	49	33	27	20	17
20/80	35	—	2	6	5	4	2	9	2	4	1	—
20/100	450	4	45	64	87	73	70	32	22	25	13	15
20/120	23	1	2	—	4	4	4	4	2	—	2	—
20/150	28	—	3	4	6	5	4	4	1	1	2	1
20/200	382	5	43	64	66	46	36	43	28	16	15	20
10/200	131	1	19	18	18	18	13	17	5	11	6	5
Worse than 10/200 ..	100	4	14	18	16	11	12	10	7	4	2	2
Total—Pupils ..	2590	21	234	375	440	384	346	284	167	135	113	91

Degree of visual acuity	Percentage of pupils at each age (on entering class)											Not reported
	Total	5 yrs.	6 yrs.	7 yrs.	8 yrs.	9 yrs.	10 yrs.	11 yrs.	12 yrs.	13 yrs.	14 yrs.	
20/20	1.8	—	0.4	0.5	0.4	1.6	2.9	2.8	1.2	1.5	10.6	1.1
20/30	5.1	9.5	3.4	4.3	2.3	5.2	4.3	7.0	7.2	10.4	9.7	4.4
20/40	8.6	—	4.7	4.5	8.0	11.2	9.5	9.9	10.8	9.6	8.8	13.2
20/50	17.6	4.7	12.4	19.7	20.0	19.5	18.2	19.7	18.5	9.6	13.3	13.2
20/60	2.1	—	1.7	2.1	1.8	2.3	1.7	1.4	2.4	3.7	3.5	2.2
20/70	20.4	14.3	22.6	22.4	21.4	18.2	22.5	17.3	19.7	20.0	17.7	18.7
20/80	1.3	—	0.9	1.6	1.1	1.1	0.6	3.2	1.2	3.0	0.9	—
20/100	17.4	19.1	19.2	17.1	19.8	19.0	20.2	11.3	13.2	18.5	11.5	16.5
20/120	0.9	—	0.9	—	0.9	1.0	1.2	1.4	0.6	—	1.8	—
20/150	1.1	4.8	1.3	1.1	0.7	1.3	1.2	1.4	0.6	0.7	1.8	1.1
20/200	14.7	23.8	18.4	17.1	15.0	12.0	10.4	15.1	16.8	11.9	13.3	21.9
10/200	5.1	4.8	8.1	4.8	4.1	4.7	3.8	6.0	3.0	8.1	5.3	5.5
Worse than 10/200 ..	3.9	19.0	6.0	4.8	3.6	2.9	3.5	3.5	4.2	3.0	1.8	2.2
Total—20/70 or worse ..	64.8	85.8	77.4	68.9	66.6	60.2	63.4	59.2	59.9	65.2	54.1	65.9

Note: Figures are from E. T. Myers' survey data.



XII. TREND OF VARIOUS EYE CONDITIONS BY AGE
At Time of Entering Sight-Saving Class

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THE BLIND AND THE PARTIALLY SEEING
THE BLIND

THE BLIND ¹

THE PROBLEM

SINCE no adequate method has been devised whereby a census enumerator can determine the degree of vision accurately yet quickly, figures based on census returns must of necessity be merely indicative rather than final. According to the 1920 census there were at that time 52,567 registered blind people in this country. Of this number, ages were reported for 51,919. This is admittedly only a part of the total blind population. The number is sufficiently large, however, to be safely used as a basis for figuring percentage distribution of blindness according to age (Table 1).

TABLE 1

PERCENTAGE DISTRIBUTION OF BLIND POPULATION AND TOTAL GENERAL POPULATION, ACCORDING TO AGE GROUPS

Age group	Blind population		General population
	Number	Per cent	Per cent
Under 5 years.....	367	0 7	10 9
5 to 9 years.....	1,403	2 7	10 8
10 to 14 years.....	2,393	4 6	10 1
15 to 19 years.....	2,419	4 7	8 9
20 to 39 years.....	8,522	16.4	32.4
40 to 59 years.....	12,278	23 6	19.4
60 years and over.....	24,537	47 3	7.5
<i>Total</i>	51,919	100.0	100.0

Notes: Figures for table taken from Monograph of Bureau of Census, "The Blind Population of the United States, 1920," Table 16, p. 32. (Washington, D. C., 1928.) Blind children under 1 year of age constitute less than 1/10th of 1 per cent of the total blind population. In third column the figure 47.3 has been adjusted by 2/10ths of 1 per cent, which per cent is not accounted for in the Census Bureau figures.

A recent unpublished study made by the American Foundation for the Blind, Inc., reveals an estimated blind

¹ The complete report on the welfare of the blind child will be found in Section IV B, Committee on the Physically and Mentally Handicapped.

population for seventeen widely distributed states to be 56,566. Since the records kept by the agencies in these states are known to have a high degree of reliability, it seems legitimate to use their figures as a basis for estimating the blind population in the country as a whole. The figure for the total general population of these states as given by the 1930 World Almanac is 60,683,000, and for the total general population of the country is close to 120,013,000. Since the population of these seventeen states is almost half that of the entire country the total blind population probably approximates 114,000. It must be reiterated, however, that many of these figures, including those of the World Almanac, are based on *estimates only* (see Table 2).

TABLE 2

ESTIMATED BLIND POPULATION OF THE UNITED STATES BASED ON
FIGURES FROM SEVENTEEN SELECTED STATES, ACCORDING TO
AGE GROUPS

Age group	Age distribution of total blind population	
	Number	Per cent
Under 5 years.....	798	0 7
5 to 9 years.....	3,078	2 7
10 to 14 years.....	5,244	4 6
15 to 19 years.....	5,358	4 7
20 to 39 years.....	18,696	16 4
40 to 59 years.....	26,904	23 6
60 years and over.....	53,922	47 3
<i>Total</i>	114,000	100 0

Notes: Figures based on unpublished study of 17 selected states by the American Foundation for the Blind, Inc. Percentage distribution based on Table 1.

If the figures in Table 2 are at all correct there are at least 15,000 blind people twenty years of age or under. Of this number approximately 5,900 are children in schools and classes for the blind. About 5,400 of these are in residential schools for the blind, both private and state, and 423 are in braille day school classes in the public schools. In addition to these a scant 100 children are being cared for in nurseries for blind babies.

Probably the largest group which today finds itself de-

prived of adequate educational opportunity is that of the deaf-blind. Out of the 618 people thus doubly handicapped of whom we have record, about 100 are known to be of school age.

Even though the estimated number of blind children in this country should prove to be in error by a few thousand, nevertheless, the fact that many such children are not receiving the amount or kind of schooling which is their due would still appear to be beyond dispute. Many of those not at present under any educational influence probably should be attending braille day school classes in the public school system of their city or district, but because of the lack of information concerning the location of these children no definite statement can be made. There are, however, other students now attending schools for the blind who would undoubtedly profit more by living at home and attending public schools like other children.

EXISTING PROVISIONS

RECOGNITION OF THE PROBLEM

Considering the country as a whole, the idea of classes for blind children in the public schools has not developed at all rapidly. This is partly due to lack of information as to the real purpose of braille classes and partly to a feeling by members of local school boards that they have enough problems already without taking upon themselves this additional, supposedly expensive, responsibility as long as good residential schools are maintained for the express purpose of meeting the need. Also, many educators are convinced that the residential school is really the better place for the education of blind children because of their need for special supervision beyond the hours ordinarily spent in the classroom. It is likewise supposed to be easier to give them proper vocational guidance and training in the residential schools.

There is, however, another side to the picture. The ideal braille class department in a public school system can do more than any other one agency toward fitting the blind child

into the community on an equal plane with his seeing friends. Much of the present criticism of braille day school class departments would be silenced if all those now in existence more nearly reached the standard obtained in a few of the pioneer cities. In braille day school classes the primary danger lies in the lack of appreciation on the part of the board of education and the superintendent of those problems peculiar to the education of blind children. For this reason even the most ardent exponents of classes for the blind in the public schools will agree that a braille day school class should not be established unless there is evidence that the board and the superintendent are ready to pay for the best possible supervision and instruction, and will make sure that such qualified personnel has been obtained. They should also be ready to support the braille class department by insuring adequate provisions for appliances needed in the education of the blind.

If really adequate braille day school class departments could be established in most of the large cities, it would be an inestimable boon to many blind children. Few educators of the blind will dispute the fact that some children benefit more by attending residential schools for the blind than by living at home and attending braille day school classes. Nevertheless, many are better prepared to cope with the world as they grow older if they have been able to live their whole lives as members of the seeing community and as part of the normal family group. There are good reasons why some seeing children profit more from residential school training, but there are equally cogent reasons why the majority should be taught in day schools which permit their living at home. The reasons for giving day school experience to blind children are even more important. Even a seeing child who visits his family only during school vacations is likely to be regarded as something of an outsider before many years, both by himself and by his family. In the case of blind children this attitude is especially likely to develop. Most private school pupils with normal sight come from classes in society whose members are closely interwoven and

they are in constant touch with members of their own social group through the friendships they make at school. But a large percentage of blind children are lifted out of their normal social and intellectual environment, and as a result are likely to become, from a social point of view, misfits everywhere.

Attendance in braille day school classes which are properly conducted, results for the blind child in association with seeing children in various social interests, in Junior Red Cross work, in 4-H Clubs, in class meetings, and so forth. This brings results of great value to the development of blind children because of—to express it in the words of a braille class supervisor:

. . . the more wholesome attitude which our blind people from the day schools are likely to assume toward their relationship to society as a whole. Our day school children from the beginning develop the concept that they are, primarily, citizens of the school or of the community, and only secondarily, blind, in contra-distinction to the concept now held by so many blind people, that they are, primarily, blind individuals, and secondarily, members of the greater whole. As a bit of social philosophy, these two concepts have a far-reaching effect, not only upon the blind people themselves in their efforts to earn a livelihood, but in the part which society is expected to play in furnishing means of support. Needless to say, these two points of view form the basis for happiness or unhappiness in the normal life contacts of the individual, determining as they do the question as to whether the blind individual will seek his happiness and inspiration from the sighted friends about him, or whether merely tolerating these associations, he puts them aside whenever possible for contacts with other blind people.¹

GROWTH OF THE WORK

The first public school class for the blind was established in Chicago in 1900. This was soon followed by classes in Cleveland, Milwaukee and Cincinnati. Since that time seven-

¹ Meyer, G. F. "Some Advantages Offered Children in Day-School Classes for the Blind."

teen other cities have made legal provision for braille classes although three of them have no classes at present (Table 3).

TABLE 3
COMPARISON BETWEEN BRAILLE CLASSES, THEIR PERSONNEL AND
RESPECTIVE CITY POPULATION

BRAILLE CLASSES IN PUBLIC DAY SCHOOLS					
City	Popu- lation	Classes	Full- time teachers	Part- time teachers	Pupils enrolled Dec. 1, '29
St. Cloud, Minn.....	15,873	1	1	0	7
Johnstown, Pa.....	67,327	1	1	1	17
Duluth, Minn.	98,917	No braille class at present time; children in sight-saving class			2
Youngstown, O.....	132,358	1	1	1	12
Paterson, N. J.....	135,875	1	1	—	14
Atlanta, Ga.....	200,616	1	1	1	6
St. Paul, Minn.....	234,698	No braille class at present time; children in sight-saving class			2
Toledo, O.....	243,164	—	1	1	8
Jersey City, N. J.	298,103	1	1	0	10
Seattle, Wash.....	315,312	No braille class at present time; children in sight-saving class			3*
Minneapolis, Minn.....	380,582	3	2	4	23
New Orleans, La.	387,219	—	—	—	8*
Cincinnati, O.	401,247	—	—	—	11*
Newark, N. J.....	414,524	3	2	2	17
Milwaukee, Wis.....	457,147	1	1	—	7
Buffalo, N. Y.	506,775	1	1	—	5
Los Angeles, Cal.. . . .	576,673	7	8	0	40
Cleveland, O.	796,841	3	3	5	30
Detroit, Mich.....	993,678	5	6	1	43
Chicago.....	2,701,705	6	6	—	68
New York.....	5,620,048	—	—	—	90

Total, 21 Cities 423 Pupils

Notes: Figures for braille classes taken from Committee's questionnaire to day-school classes for the blind.

City population figures taken from 1930 World Almanac (based on 1920 Census), pp. 392-7.

The figures marked with an asterisk (*) have been taken from the 1929 Report of the American Printing House for the Blind, Louisville, Ky. p. 21.

A study of the table shows clearly that the number of braille classes, the number of pupils enrolled, and the number of teachers supplied for these classes do not bear close relationship to the size of the general population of the cities in which they are located.

Health of Blind Children

Careful attention to the physical development of blind children is highly important. The chief incentives to physical activity, and therefore to normal growth, come to a child with unimpaired sight through the medium of the eyes, except possibly at certain stages of development during the first five years. The blind baby lacks these stimuli, and unless adequate substitute stimuli can be found he will vegetate physically and in consequence his mental life will lie dormant.

Very little is known about organized work for maintaining and improving the health of preschool blind children. In Cleveland a visiting teacher keeps in close touch with the blind baby and its family, watching carefully over his physical and mental health. So far as is known, Cleveland is the only city in which the training of preschool blind children is made a definite part of the educational program (page 254).

Because of insufficient data little can be said with regard to the adequacy of the health service now available to blind children after they enter the public schools. It may not be superfluous, however, to point out the difference between *quantity* and *quality* of service. Since most of the braille day school classes are located in systems ranking high in their concern for the physical and mental well-being of their pupils, it is presumable that the blind students are receiving at least as good health service as their seeing comrades; but often blind children need extra attention, especially from ophthalmological and orthopedic specialists. In some cities they actually do receive such care, but it is not known whether this is the general practice. Table 4 summarizes the little data available on this question; it also gives a clue to the attitude toward the admission of pupils with positive Wassermann reactions.

Blind children with problems of mental health are referred for treatment to the same agencies in the community as are children who see. Many of the best schools and classes in the country have hesitated to use the psychiatric and psychological services available today in their own territory be-

cause these agencies, although they may rank among the best in the country, are often not qualified to make valid judgments concerning blind people, probably because of their infrequent contact with this handicapped group. In Cleveland and in the northern part of Ohio the problem is partly

TABLE 4

PRESENT POLICY REGARDING PHYSICAL EXAMINATIONS IN SEVENTEEN
BRAILLE CLASS DEPARTMENTS

	<i>Number answering "yes"</i>	<i>Per cent of total replies</i>
Examination required for admission		
General physical	8	47
Ophthalmological	15	88
Re-examination		
General physical		
Periodical	11	65
Occasional	2	12
According to condition		
Ophthalmological		
Periodical	7	41
Occasional	1	6
According to condition	6	35
Admission with positive Wassermann	10	59

met by the employment of a psychologist who has had years of experience in working with blind children.

It is encouraging to note among educators of the blind, a growing realization that the additional handicaps of these children often prove to be the greatest drawbacks to their social and vocational adjustment in later life. From this point of view, the most obvious handicaps are: additional physical defects, peculiar and repulsive mannerisms, general physical debility, nervous instability, and speech defects. All of these handicaps involve both physical and mental health. Many of them have developed because of the ignorance of the parents and the indifference of the community with regard to the special needs of young blind children.

Further study of existing possibilities must be made before statistics of any value can be obtained on the ade-

quacy of the physical and mental health service accessible to blind children in braille classes.

Another aspect of the health question which should be included here covers the type of play activities most desirable for children who do not see. In this field the braille day school class is not conspicuous for its achievements, since the authorities usually do not realize the necessity for providing activity programs outside of school hours which will take the place of the more spontaneous and strenuous play in which it is possible for seeing children to indulge. Blind children are likely to suffer from physical disabilities which are the direct result of their blindness but from which they can often be entirely saved by the right kind of preventive training. For instance, many blind children have orthopedic difficulties which result from their natural tendency to throw out the feet as they walk in order to avoid hitting objects too forcibly. This strained position of the feet almost surely results in difficulties which can be avoided or remedied if the child is given the correct training when he is still very young. This is illustrative of the special problems concerning physical health which should be met by carefully planned activity programs.

Scouting and similar activities for both boys and girls are developing rapidly in the residential schools for the blind. There is no information as to how extensively these activities are being encouraged for braille class children. Whether the blind children are placed in troops with seeing scouts or are gathered in troops of their own, the chief difficulty is the same, that of finding leaders who understand the special problems of blind children, who are qualified by temperament for scouting work, and who have the right personalities to influence properly the boys and girls under them. Scouting is mentioned here because organizations of this type offer excellent opportunity to blind children for carrying on activities conducive to all-around physical development in the society of seeing boys and girls of their own age.

Proper attention to the special health problems of blind

children is an aspect of their care and training which deserves more thought and action on the part of the health departments of the public school systems than has thus far been forthcoming. Too often this matter has been left to the resourcefulness and interest of the teacher who has few spare moments to devote to it.

COMPULSORY EDUCATION

There are ten states in the Union which do not have compulsory education laws applying to blind children: Alabama, Florida, Kentucky, Louisiana, Maine, Missouri, Nevada, New Hampshire, South Carolina, and Wyoming. Of these ten states, five have state schools for the blind, and indications are that the other states provide well for the education of their blind children.

In passing, it should be said that there has been a great deal of difficulty in enforcing the application of the compulsory school laws with blind children. This is often due to the lack of appreciation of the value of an education to a blind child and also to a reluctance on the part of local officials to compel a blind child to leave his family to attend a distant residential school. Enforcement of compulsory school attendance offers much less of a problem in communities where a day school class for the blind is in operation.

In some of the southern states where compulsory education is enforced with blind white children, there seems to have been, hitherto, little attempt to enforce the law with blind colored children. There is, however, a growing tendency toward improving the educational facilities for the Negro blind, as is evidenced, for instance, by the recent opening of a class for blind pupils by the State of Mississippi in the Piney Woods Country Life School for the Colored, a privately supported institution for colored youth with sight. In 1926, West Virginia opened a school for the Negro deaf and Negro blind. So far as is known, however, no braille class has been established anywhere for colored children exclusively, although in the North no distinction has been

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made between the treatment of white and colored children in the braille classes.

It may be of interest to note here that the only braille day school classes for white children south of the Mason and Dixon Line are those in New Orleans and in Atlanta.

CARE AND TRAINING OF BLIND BABIES

Several states have made provision for the training of blind children under school age. This legislation, for the most part, simply authorizes the payment of boarding and tuition fees for blind babies in some special institution in the United States designed for this purpose. These laws have usually been passed as the result of the efforts of the International Sunshine Society.

Responsibility for preschool and home training of blind children who will later become braille day school class pupils is not yet recognized sufficiently. In most cities having braille day school classes the *physical* health of such blind babies as are discovered by private or public organizations is well guarded. Generally speaking, however, the need for actual *mental* training of these handicapped babies is not recognized and, therefore, not provided for. Too often the theory that babies should be allowed to "just grow" is applied to these little children, the result being that instead of growing as they should, they vegetate, for blind babies must be painstakingly taught the simple little things which other babies learn through imitating what they see. Another reason why so little has been done toward the education of preschool children is that so little is known regarding the best methods for giving this very specialized form of constructive experience. Herein lies one of the outstanding problems calling for research.

Cleveland's arrangements for safeguarding the development of the preschool children who will eventually reach her braille day school classes, furnishes an outstanding illustration of what can be accomplished in this field. The following quotation from a letter written by the visiting teacher in

Cleveland, will illustrate the general duties which such a person should fulfill:

The kind of home training furnished by the visiting teacher is not of the nature of school subjects nor should I call it as complex as "handwork." We aim to assist in the development of the simple achievements of the normal child, that is, dressing and undressing self (including toilet care); feeding self; climbing up and down stairs; going about the house unaided; running freely in open spaces; jumping; ability to handle toys, such as building blocks, wooden beads, dolls, wagons (both toy and real), other drag toys, sometimes nail hammering, etc.; an understanding of or acquaintance with as many things as possible in his physical environment. A very important part of the training is to prevent unwholesome and maudlin indulgence on the parents' part, to secure more satisfactory and constructive discipline, and to build up in both parents and child a better attitude toward his handicap.

Other cities have no systematic arrangement for discovering and training these children, although as a rule many agencies, both private and public, cooperate with the braille class department in searching them out. For instance, in New York City the New York Association for the Blind (otherwise known as the Lighthouse) has established a kindergarten class which includes a few of these preschool children, giving them such special training as will prepare them for their entrance into the regular braille classes. It also gives advice to mothers of blind babies in their homes whenever it has the opportunity of doing so. Often the teacher of the braille class adds to her already heavy duties that of visiting the home of some prospective blind pupil in order to help guide the parents in his training. When it is finally realized that proper training of the preschool blind child will prevent the development of some of the personality handicaps which are life-long obstacles to the success of many blind people, other braille class departments probably will follow the lead of Cleveland in providing a visiting teacher specially trained and qualified to do this type of work.

ORGANIZATION AND ADMINISTRATION OF BRAILLE DAY
SCHOOL CLASSES

At least eight states encourage the establishment of day school classes for the blind by allowing state subsidies to cities when such classes are operated. These subsidies take one of several forms: (1) payment of part of the teachers' salaries; (2) a certain specified grant for each class; (3) a certain fixed annual per capita allowance; (4) payment of excess cost of training a blind child over that of instructing a seeing child. Such state aid is usually coupled with some form of state supervision which is largely concerned with insuring that cities comply with certain specified standards as to qualifications of teachers, physical equipment of classroom, salary schedules, and so forth.

Of the 21 cities making legal provision for the establishment of braille day school classes, 3 of them do not have any at the present time, although 7 blind children are being cared for in their school systems. In the remaining 18 cities there are 416 blind children attending public school. The need for more braille day school classes in more cities throughout the country is presented on page 246.

Judging from the figures available, the cost for each pupil varies rather widely in the different braille day school class departments. Although the range appears to be from approximately \$120 to \$590 a child, most of the figures range between \$200 and \$300. Since the amount of overhead expense included in these figures is not clear, they should be taken as indicative rather than as accurate data. Costs for blind pupils in the public schools may vary widely from city to city, but they never reach the high figures which obtain for many of the residential schools, since the boarding item with its accompanying incidentals is not assumed by the board of education.

Supervision

This is such an important factor in the success of braille day school classes that it would be hard to over-emphasize

the need. In most cities these classes are placed under the supervisor of braille and sight-saving classes. In others they are suffering from the nation-wide tendency to place all special classes under one general supervisor. Even though this centralization of control may be a step in advance, administratively speaking, it is not so effective from the supervisory point of view. Quite unconsciously the supervisor tends to give an undue proportion of his time and attention to a particular group in which he is most interested personally. Even where the supervisor has only two closely related groups between which to divide his interest, the result has not always been equally beneficial to both. As a rule, one supervisor can satisfactorily watch the interest of braille and sight-saving classes, if properly trained and equally interested in both types of work, but these two types of classes should never be placed under a supervisor who is also responsible for the welfare of the crippled, the cardiac, the deaf and hard of hearing, the subnormal, and the neurotic. The care and training of blind children is so important and so technical in character that seldom does a general supervisor have the specialized knowledge to equip himself for this responsibility.

It may not be amiss to comment on the fact that the duties of supervisors are sometimes conceived to be almost exclusively administrative rather than truly supervisory. Braille class supervisors should have the time to really supervise; that is, to guide, to suggest, to ease the strain for the busy braille class teacher whenever he can, and to plan and provide for all extra-curricular activities, such as scout work, special music lessons, proper home training for the children, and so forth.

There seems to be no established policy as to training requirements for supervisors, although most of them are college graduates and a number have taken additional courses of a professional nature to help them in their work. For a blind person with the right personality and the right background in training and experience, the supervisorship of braille classes would appear to be a position which he

could fill with notable success. It is distinctly necessary that he have all of the above qualifications, however, as well as an unlimited capacity for work. Two of the present supervisors are blind men of outstanding ability, who opened the departments in their cities and who have kept them up to a high standard of efficiency ever since. A blind supervisor is a constant object lesson to his colleagues as to what can be accomplished by a person without sight and an inspiration as well to the blind children under his supervision.

Supervisors' Salaries. Salaries appear to be established on the same scale as those of other supervisors in the same school systems. Although most of them range between \$3,000 and \$4,000, the upper limit of their range is above the \$4,000 mark.

Teacher Qualifications

The calibre of the teacher chosen to take charge of the braille classroom is as important a factor as is that of the supervisor. Only the best teachers are adequate to the task of teaching blind children, and the importance of training and experience should not be minimized. In addition to these qualifications, the teacher of a group, the members of which make such diverse demands upon her, needs to have not only the tact and the initiative of a diplomat but the originality of a creative artist. The braille class teacher must be ready to meet a variety of emergencies and must always be professionally up-to-date if she is to be alert to the needs of the individuals in her very mixed group. The braille teacher must often be familiar with the subjects being taught in eight grades and the kindergarten, if there happen to be in her class blind children in each of these grades. She must be sufficiently well versed in all of these subjects to jump, mentally, from first grade arithmetic to sixth grade history and back to third grade nature study, in one trip down a line of desks. In addition to this she must teach blind beginners how to read and write braille and how to use the special appliances needed in the education of the blind. She must

also fulfill many other duties which do not come within the scope of the ordinary teacher's work.

Training. An adequate criterion of the training for a braille day school class teacher can be set forth only in a general way, but in addition to all the desirable personal attributes already mentioned, the minimum period for training should be three years, preferably four, beyond high school at a normal school or teachers college of high rank. This should be followed by a minimum of six credits in professional courses directly related to work for the blind. The minimum amount of previous teaching experience should be three years in the regular grades. It is desirable that such a teacher shall also have the benefit of at least a few months' experience in teaching blind children under direction. Most of the teachers employed in day school classes at the present time have a background of more than these suggested minimum qualifications.

Salaries for teachers of braille day school classes range from slightly above \$1,400 a year to approximately \$3,500, according to term of service and local salary schedules. How many cities pay these teachers a differential, or how much such extra salary allowances may be, is not known, although the differentials are probably very similar to those paid to sight-saving class teachers.

Location of Class. Experience has shown that it is seldom advisable to place *more than one braille day school class in a school building*. If more than one class is located in a single building it is likely to hamper the smooth running of the plan, universally followed, of having the pupils attend classes with the seeing children for a major part of their recitations. The grouping of any considerable number of blind pupils in one center also interferes with the natural assimilation of the blind pupils into the recreational life of the school community.

Transportation. The matter of transportation to and from school is a much more complicated problem than would at first appear. In most cities transportation is furnished to blind students by the school board, and this is as it should

be. However, experience has taught that the regular modes of transportation used by seeing children attending the same school are usually the most desirable for blind children. Often the blind child has a relative or neighborhood friend who attends the same school and who is glad to act as guide, either without charge or for a very small sum.

Requirements for Admission to Braille Classes

Requirements are not uniform throughout the country. The Committee is of the opinion, however, that care should be taken to ascertain: first, that the child is actually blind; second, that he is of normal intelligence; and third, that his health is such that attendance at school is advisable. While it may occasionally be necessary to enrol candidates for admission to braille classes tentatively without thorough examination, little time should be lost before they are passed upon by the following persons: a competent supervisor, a competent oculist, the school physician, and by a psychologist experienced in the testing of blind children.¹

Character of Pupil Population

According to available information the distribution of blind children in braille day school classes does not follow the usual trend for the regular grades, where more children are to be found in the first three or four grades than in the higher grades. In the fifteen cities reporting on this question it was found that there were more pupils in grades four through eight than there were above or below. One reason for this distribution may be that the membership of the middle grades is increased by children blinded by accidents or disease after they have been in school for a few years. Another explanation is that there is probably a larger percentage of braille class pupils who graduate from elementary school than there is of seeing pupils. There is also a tendency for the parents of a blind child to move from rural

¹ Samuel P. Hayes' final revision of the Hayes-Binet tests is now ready for distribution.

districts and more backward cities into cities having braille day school classes, although this change of residence may not take place until the child's progress through the grades has made special attention imperative.

The range of ages within each grade varies widely even where careful attention is given to the proper placement of each individual child. Because there are so few pupils within any one grade, a table giving age ranges by grades for the few cities from which there is available information would have little significance. Instead, figures are given in Table 5 of the age ranges, by grades, over a period of fifteen years as reported by one braille day school class department.

Following is a quotation from a letter from the supervisor who contributed Table 5:

In order to present conditions that have been experienced, and because of the small number of pupils present in one grade at one time, and also because of the variability in age of those children, we have taken a period of years, i.e., fifteen, selected the youngest and the oldest, and estimated the average age for the grade.

It works out that the pupils whose ages were low for the primary and grammar grades are the pupils who have been able to achieve high school graduation. . . .

TABLE 5
AGE-RANGES AND AVERAGE AGES, BY GRADES, IN ONE BRAILLE
CLASS SYSTEM DURING THE LAST FIFTEEN YEARS

Grade	Age-range	Average age
Kindergarten	*5-9	6 5
I	7-10	7.5
II	7-11	8
III	8-11	9
IV	9-12	10 5
V	*10-19	12
VI	11-16	14
VII	12-18	16
VIII	13-18	17
IX	14-17	15
X	15-18	16
XI	16-19	17
XII	17-20	18

Note: Those marked with asterisk (*) are very unusual.

The range of I. Q.'s of pupils we receive for training, added to the varying ages at which loss of sight occurred, and the varying length of time between loss of sight and entrance into school, causes

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considerable irregularity in ages, for different grades. The school adjusts itself to individuals.

Since this statement presents the usual situation in braille class departments, it is apparent that teachers in these classes must give a great deal of their time to individual work. No table, however, can adequately picture the difficulties involved in working with so many degrees of chronological and mental age, and with so many different personality problems. Blind children differ little from seeing children in the kinds of personality problems they develop, but the difference is one of degree. A blind child with an inferiority complex, or with a feeling of superiority or self-complacency, is much more deeply affected and much more perplexing to deal with than a seeing child because the reasons for his mental attitude are more compelling and the remedies are less accessible.

An investigation made by the American Foundation for the Blind, Inc., at the beginning of 1930 disclosed the fact that during the last five years 852 *blind people have graduated from high school*. Of this number 75 were students in braille day school class departments. In every city supporting braille classes blind children are given the opportunity to take the full high school course, usually substituting some literary course for the required science course. In only one or two instances is a special braille class provided for blind high school students, as even in some of the larger cities, it is deemed more advantageous to provide individual assistance to blind high school students than to gather them into a special class or center. Given the services of a good reader, the blind boy or girl can fit into the regular class of seeing students with little need for special attention. Extra assistance in foreign language work or in mathematics is often supplied by special teachers employed by the board of education on an hourly basis for this purpose. Such service is usually rendered outside of school hours. It may be noted here that at least fifteen blind pupils are known either to be preparing for college privately, or to have entered recently after private preparations.

There seem to be no special arrangements within the public school system for taking care of blind children with additional handicaps. The blind feeble-minded child, the deaf-blind child, the blind cripple are usually sent to some institution or allowed to remain at home. Although the public school system can hardly be expected to provide for these children who represent very limited groups, present institutional provisions for them are far from adequate. Discussion on this topic is not within the province of this report.¹

Course of Study

Generally speaking, the course of study for the braille day school class child is the same as that required of the seeing children with whom he recites. Only those portions of the program are omitted which are strictly dependent on sight-drawing, for instance. In at least four cities, blind children have kindergarten training before entering the first grade, and in three of these they attend the regular kindergarten with seeing children, taking part in everything possible. Six others give some work of this kind in conjunction with first grade work. Although little has been done to evaluate the effectiveness of kindergarten training for blind children, the present methods of training for seeing children offer so many suggestions which are directly applicable to the blind, that the invention of new methods is probably not so urgent as at other points in the curriculum. The problem here seems to be that of finding a teacher with sufficient resourcefulness to adapt known methods to individual blind children.

By far the greatest drawback to adequate kindergarten training of blind children lies in the lack of appreciation of the need for this training on the part of supervisors and superintendents. Yet it is much more necessary for children without sight to have the advantage of training in motor dexterity and in motor-mental coordination, which kindergarten work offers, than it is for seeing children.

¹ Report of the subcommittee on The Blind and the Visually Handicapped. (Committee on the Physically and Mentally Handicapped. IV B).

Twelve cities reporting give extra training in music to blind pupils showing unusual ability or special interest. Seven cities give extra work in manual training and hand-training, three in physical training, and seven in typewriting, but only three cities provide *all* of these extra courses. In one city a special course is given in arithmetic short-cuts which is designed to help the blind student in doing mentally those everyday problems which seeing people jot on paper. Such courses are given in addition to the regular grade work.

Very few day school classes arrange for courses which are vocational or prevocational in character, except as the courses just mentioned may be so considered. In four cities pupils are taught chair caning; in one of these four a piano-tuning course is also given. Courses in basketry and rug-weaving are given in three cities and sewing in two. Six cities report that blind children may not attend vocational high school; three others say that although such students may attend, they are not doing so at present. The adequacy of the courses providing prevocational or vocational training depends somewhat upon the point of view of the observer. In most places the training is thorough, but the content of the courses sometimes shows only remote connection with changing business and professional demands. The music courses may be taken as an illustration. Whenever music is taught the courses offered are of high calibre. However, except for the occasional genius whose need may be adequately met by an exclusively classical diet, the musical blind person of average talent, who is well qualified to hold a position in a dance orchestra, is left without the necessary preparation because the high-grade teachers of music employed for teaching the blind do not include jazz in their approved list of courses.

In at least one school, music has been taught as a social asset or as a means of enabling a blind child to participate in the social and recreational life of the community; for example: instruction is given on such musical instruments as the clarinet, violin, cello, drums, guitar, and mandolin, in

order to enable these pupils to take part on as nearly an equal footing as possible with seeing children in such organizations as the school orchestra, high school band, or in local dance orchestras.

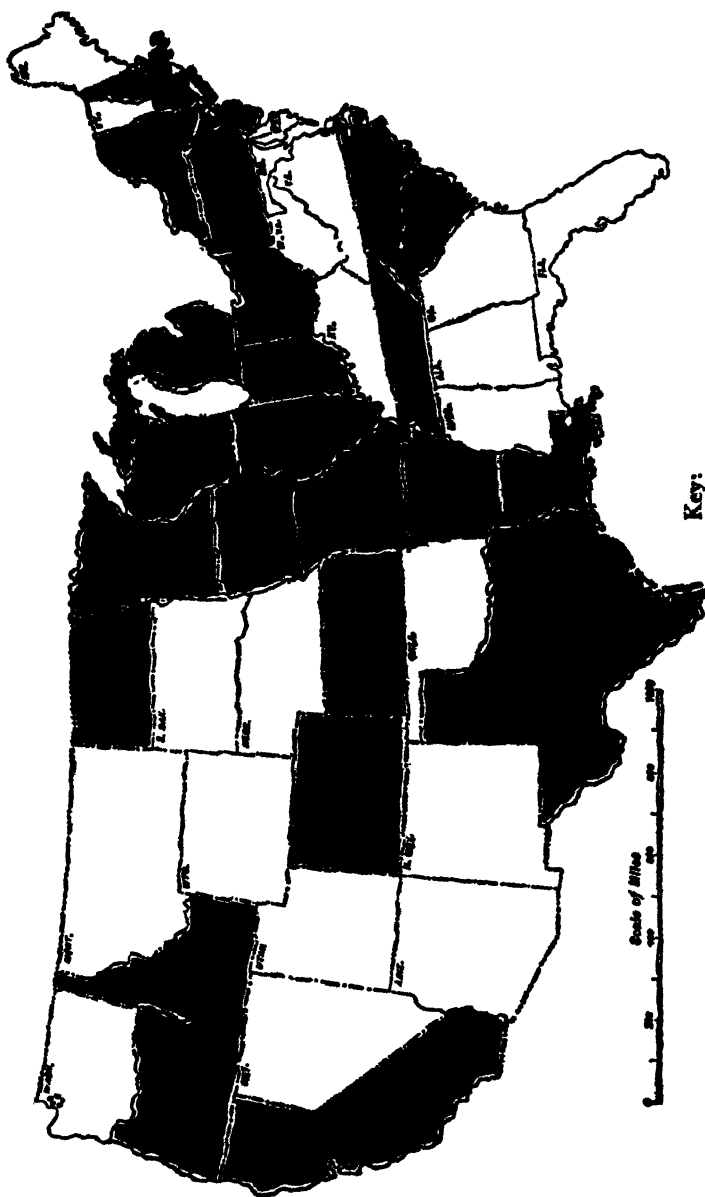
With the music situation in its present condition, music is of doubtful vocational value to most braille students. Chair-caning could well be used as another illustration, for there are few blind people who can make more than a bare living in this occupation.

This discrepancy between training and opportunities is not entirely the fault of the braille class departments nor of the residential schools. The economic world changes so rapidly that no one agency for the blind is in a position to give the thought, time, and money necessary to keep up-to-date on vocational possibilities for their students. This is true even for the residential schools having the services of vocational advisors and placement agents. Some national organization should be given the necessary financial backing to maintain a continuous survey of vocational possibilities for blind people and to do necessary research. By close co-operation with such an agency the schools and classes might arrange their prevocational and vocational courses and direct their vocational guidance more nearly according to the demands of the times. The American Foundation for the Blind, Inc., is now attempting this on a small scale but cannot, for financial reasons, extend its work to the degree desired.

Those blind pupils who are preparing for college attend the same classes as do seeing college preparatory pupils. A few cities furnish special tutors or readers to assist such high school pupils.

Higher Education

While there is a difference of opinion among educators of the blind as to whether or not blind children should be instructed in special institutions for the blind or in the public schools for the seeing, all educators are unanimous in their convictions that blind students seeking higher edu-



Key:

States making provisions

All others do not make provisions

STATE AND PRIVATE PROVISIONS FOR FINANCIAL AID TOWARD HIGHER EDUCATION OF VISUALLY HANDICAPPED STUDENTS

cation should attend the regular universities and professional schools established for those who see. Blind students are somewhat handicapped, however, in attending these institutions for the seeing; first, because special textbooks and special appliances for the blind are not available, and second, because it is much more difficult for a blind person to earn the necessary funds to finance himself through these additional four years. Since in many cases higher education enhances a blind person's prospects of becoming self-supporting it has been deemed good public policy for the state to assist such students to take work in institutions of higher learning. Accordingly, many states have established scholarships of one kind or another for blind students wishing to attend college or professional schools. New York was the first State to make such provision. The use of this allowance was restricted to the payment of readers.

Many features of the New York law were copied by other states. The tendency in recent times, however, has been to make the grant more liberal, both as to the amount and to the use to which the money may be put. The earlier laws restricted the use of this scholarship to blind students wishing to attend institutions of higher learning within the state of residence. This restriction is also absent in the more recently enacted legislation on the subject. At present 26 states have similar allowances varying from \$100 to an indefinite amount limited only by the size of the total appropriation and by the requirements of the individual students.

Because of the difficulty of finding many congenial posts for blind college graduates where the financial returns and the dignity of position are commensurate with their training, educators of the blind are beginning to realize the necessity of restraint in urging blind students to continue their studies beyond high school. This problem of finding the right position for highly educated blind people deserves immediate attention. Many of these people are as well qualified as some of their seeing classmates to hold certain kinds of positions, but at the present time there is a lack of definite information regarding positions open to blind persons. There

is also a lack of information as to how to proceed in overcoming some of the obstacles of prejudice and misconception which prevent qualified blind persons from securing positions which they are entirely capable of filling. A minor problem connected with this is the necessity of establishing some standard as to what should be required of a blind student before he is given encouragement or financial assistance toward higher education.

Social Experience

Social training and opportunities for social contacts are probably not as inadequate to the needs of the pupils in the day school classes for the blind as they are in residential schools. At least there is a general impression that pupils of braille day school classes react more normally to the social environment than do those trained in institutions. To bring about normal social life with seeing people for the many blind children whose personalities may have been warped during preschool age is a difficult task calling for training, tact and sympathy on the part of the teacher and the supervisor, for few blind children find social adjustment as easy a matter as do other children. Improved preschool training, better physical training in school, and the existence of the scout and other outdoor and indoor group activities will do much to make the blind boy or girl socially acceptable. It will still remain for someone to find opportunities for mingling blind students with other boys and girls of their own age. Parents and friends of the children will also need to be taught to treat them as normal members of the community.

Special Equipment. Special educational devices to be found in residential and day school classes for the blind have become standardized through use but not necessarily through merit. In this country there are at least four different kinds of type slates which are used in the teaching of arithmetic, but opinion as to their value is far from unanimous. Some day school classes make no use whatever of

braille slates, while others depend upon them to a considerable extent. A study is being made of the relative merits of these various slates in the Department of Special Studies, an experimental primary school conducted jointly by Perkins Institution and the Foundation at Perkins.

The most frequently used slates are small ones made of some light material such as aluminum which can be carried in a pocket or handbag. Styluses for punching out the braille characters are furnished with these slates. There are, however, desk slates which are larger and more cumbersome but which provide a firmer foundation for the braille paper. On this account many day school classes prefer them for use with the younger children.¹

The Howe Memorial Press and the American Foundation for the Blind, Inc., make braille typewriters by means of which a whole braille letter can be made at once. Experiments are now being conducted by the Foundation with the view to perfecting a stronger, more accurate, yet reasonably priced braille typewriter.

So far as maps are concerned the Illinois School for the Blind has done most of the experimental work in recent years on desk maps. The only large wooden dissected maps to be had in this country are made by the American Printing House.

Other types of special apparatus calling for study are those needed in teaching higher mathematics and the sciences.

Placement and Follow-up Work

Few sightless persons are able to make a satisfactory vocational adjustment without the advice and assistance of some person with experience and training in the field of vocational placement of the blind. At times, some public school systems have provided, at great expense, very satisfactory training for the blind pupils of their communities only to

¹ The slates which are used for writing braille are obtained from the American Printing House for the Blind or the Howe Memorial Press.

drop them at the critical moment when the pupils leave school. This has often resulted in much unnecessary idleness and disappointment and dependency for the blind people involved.

For many years the city of Cleveland has had a teacher on the staff of its braille day school class department trained in the placement of the blind, who is allowed sufficient time to assist the pupils discharged from the department in finding themselves, both vocationally and socially. Any well organized day school class department for the blind should have a teacher on its staff doing this sort of work.

SUMMARY

The situation regarding the education of blind children is presented as briefly as is consistent with accuracy, the extent of the problem involved in, and the adequacy of existing provisions for, the care of blind children attending braille day classes in the public schools. It has been pointed out that of the probable 15,000 blind children in the country, considerably less than 6,000 are receiving any sort of educational training, and of this number fewer than 450 are being cared for by city school systems. On pages 245 to 247, the reasons have been presented for giving to more blind children those advantages which they can receive only through braille day school class training. These same pages emphasize the importance of providing nothing but the best in supervision and instruction. The available data have been presented concerning the existing provisions for the health of blind preschool and school children, and suggestions have been offered as to what should be done on their behalf.

The importance of more adequate and more extensive personality training, and of constructive play activities have both been emphasized.

The present status of compulsory education is shown, and the value of having compulsory school laws applying to blind children is brought out. The present lack of educational training for preschool children is discussed and an

illustration given of what is now being done in the only city which provides a visiting teacher for these children.

What little could be learned of existing provisions for the training of supervisors and teachers is given, together with a list of suggested requirements for teachers of braille day school classes. Note has been made of the fact that the salary schedules for both teachers and supervisors are seldom commensurate with the amount of training and responsibility required of the incumbents of these positions.

Minimum requirements for admission to braille classes have been suggested. There is some discussion about the character of the pupil population in braille day school classes, and special attention is given to the difficulties confronting the teacher in serving adequately a group of children who vary widely in chronological and mental ages and in grade status.

In connection with the course of study, two items are especially stressed: one, the lack of recognition of the value of kindergarten training for blind children, and the other, of the present inadequate status of vocational guidance, and prevocational and vocational training. Comment is also made upon the discrepancy which often obtains between vocational training and vocational openings for blind students. The vocational difficulties of the blind who continue their studies after high school are also presented, and the need for an investigation of their problems emphasized. The importance of social training and opportunities for social contacts is discussed.

RECOMMENDATIONS

Although the data are incomplete in many instances, they are, nevertheless, sufficiently accurate and comprehensive to justify the following recommendations:

1. Since there is so much uncertainty as to the number of blind children who are now without educational advantages to which they are entitled, it is suggested that a census of the blind sponsored by the Federal Census Bureau, to be carried out within the near future, would be of great value to cities which are considering the establishment of braille day school classes, as well as to organizations concerned with the proper vocational placement of blind students when they leave school.

2. There appears to be considerable need for the establishment of braille day school classes throughout the country and especially in the South. Before any city is ready to establish such classes, however, the extent of the problem in that locality should be better understood than it is in most places at the present time. Because of the importance to the blind child of correctly formed habits in his preschool days, and because of the difficulty with which he acquires constructive habits as compared with the seeing baby, one of the most important studies calling for immediate attention is that of the educational and health problems of the preschool blind child. After the problems involved have been carefully studied, instructions should be given out for the use of parents and guardians on constructive play activities, the prevention of unfortunate mannerisms, and the correction of mannerisms already acquired. It is suggested that as a preliminary to the extensive study of the preschool blind baby, the adaptation and development of preschool intelligence tests would be helpful, although such tests would of course be serviceable guides rather than infallible measuring sticks.

3. Constructive activity programs should be developed to meet the needs of braille day school class pupils during their free time.

4. A survey should be made of the need for establishing classes for blind colored children in those sections of the country where separate classes for the two races are the rule.

5. Minimum requirements should be established for supervisors and teachers of braille day school classes. In this connection a study should be made of the proper salaries to be paid supervisors and teachers.

6. One phase of the education of blind children which needs immediate attention is that of the vocational adjustment of braille day school class pupils. The first question which should be settled on this subject is whether or not public schools should provide any specialized vocational training to blind pupils. The next step should be that of working out a program which will make possible the necessary correlation between vocational training and vocational openings for young blind people, and it should take into account the individual differences of these prospective pupils. The tendency to say that "the blind can fill this class of jobs" should be discouraged and the thought substituted that "a given blind person of such and such abilities can adequately fill this particular position." In order that vocational and prevocational training may be effectively correlated with possibilities for placement, it is suggested that support be given to a centrally located bureau for conducting intensive vocational research, to be accompanied by active field surveys and frequent demonstrations in placement work.

7. The vocational problems of highly educated blind graduates of braille day school classes call for immediate investigation, since it is from the highly educated blind that the greatest returns can be expected from the city or state's investment in the education of the blind.

8. The social training of blind children should be a major concern of braille day school class departments in the public schools.

9. Whenever possible, braille day school classes should be placed under a supervisor of their own, although this is contrary to present tendencies. Where this is not possible there should be, at least, one supervisor for both braille and sight-saving classes with training in both types of work.

10. In connection with the course of study it is suggested that more attention be given to what the kindergarten has to offer in the way of discipline and of motor coordination to young blind children. A study should be made of the causes for and the possible elimination of the extreme age-ranges which occur within the lower grades among braille day school class pupils.

11. Minimum standards should be worked out with regard to financial aid, both state and local, for blind children. These standards should cover aid for preschool children, school children, and students continuing their studies after high school.

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THE DEAF AND THE HARD OF HEARING

ACKNOWLEDGMENTS

Grateful acknowledgment is hereby made to the following who graciously answered our queries or furnished us with unpublished statements which have facilitated the completion of this report:

Miss Martha E. Bruhn, Dr. P. G. Hall, Dr. Max A. Goldstein, Miss Estelle E. Samuelson, Messrs. Tamblyn and Brown, Miss Caroline Yale, and Miss Bessie L. Whitaker.

As previously stated, we are also grateful for brief statements written by Miss Corinne Rocheleau and Miss Rebecca Mack, and Mr. E. A. Allen, which came to us through other subcommittees of the Conference.

THE DEAF AND THE HARD OF HEARING

TERMINOLOGY

THE *deaf*¹ are those who were born either totally deaf or sufficiently deaf to prevent the establishment of speech and natural language; those who became deaf in childhood before language and speech were established; or those who became deaf in childhood so soon after the natural establishment of speech and language that the ability to speak and understand speech and language has been practically lost to them. In this group are included the blind-deaf and the deaf-feeble-minded. Deafness is a disability causing a greater educational handicap than blindness, hence the term blind-deaf; feeble-mindedness is a greater disability educationally than deafness, hence the term deaf-feeble-minded.

The hard of hearing are those who established speech and ability to understand speech and language, and subsequently developed impairment of hearing. These children are sound conscious and have a normal, or almost normal, attitude towards the world of sound in which they live. In previously published articles, reports and pamphlets, these children are frequently referred to as "the deafened." While such a term is correct, it has, however, often been misunderstood and used confusedly with "the deaf." It is, therefore, not used here.

Hypacousic (opposite anacousic) was the term recommended at the Second Conference on Problems of the Deaf and Hard of Hearing of the National Research Council. It is based on auditory capacity, however, which is not the

¹ Schools for the deaf are called "Day Schools" and "Residential Schools" and not "Institutions." Such schools supported by public funds are considered as belonging to the public school system. Institutional care is covered by the subcommittee on the Deaf and the Hard of Hearing (Committee on the Physically and Mentally Handicapped, IV B).

line of distinction. Another term which has been suggested is cophomatic.

Lip reading, also called speech reading, is the ability to understand spoken words and language by watching the face of the speaker. As speech is not alone the movement of the lips, the term *speech reading* is more accurate. Unfortunately, however, it is often confused in the minds of many people with the terms *speech defect*, *speech correction*, or *speech making*. Because of such confusion, children who are recommended for "speech reading" sometimes find themselves in some other class than that of lip reading for which they were intended. It is for this reason that the Committee restricts itself to the term *lip reading* although it commends *speech reading* for greater accuracy.

GENERAL DISCUSSION

Diagnosis

The *first step* toward remedying a defect or supplying a substitute for an irreparable loss is, obviously, the discovery of those individuals who need the remedy or the substitute.

The *second step* is to induce the individuals, or their guardians, to avail themselves of all ameliorative measures offered.

The *third step* is to make the remedial system an active and efficient one which will tend constantly to become more efficient in meeting the needs of the class it aims to serve by adapting methods from normal education, sloughing off those that are outworn, and giving to the maimed young lives all they can assimilate of physical and mental rehabilitation.

How far has the United States accomplished the three steps above mentioned with the deaf and the hard of hearing of school age?

A recent study of 5,000 children in public schools for the deaf was conducted by Dr. Shambaugh, under the auspices of the National Research Council. Permission for the



Courtesy of Minneapolis Public Schools

AN INDIVIDUAL AUDIOMETER TEST BY THE DEPARTMENT OF HYGIENE IN A
MINNEAPOLIS SCHOOL



Courtesy of Minneapolis Public Schools

GROUP HEARING TEST WITH AUDIOMETERS BY THE DEPARTMENT OF HYGIENE IN A MINNEAPOLIS SCHOOL

study by the Council was obtained through the initiative of the American Medical Association.

They report on 5,348 children and state that 3,334 of them were congenitally deaf. Of the remaining 2,014 who had acquired deafness it was found that 1,243, or 61 per cent, had acquired it before they were three years of age. The question is raised whether many of these may not have been born deaf, the fact not having been discovered until the children were from one to three years old. It is stated that the danger zone for loss of hearing is up to the age of ten. According to the report relatively few between the ages of ten to twenty years become deaf. Another question might be raised here, for is it not likely that after a child is ten, with language already acquired, any hearing loss that he may have is not so likely to be discovered, or, if it is, that the child is not sent to a school for the deaf in which this study was carried on?

Of 3,206 cases with a history of acquired deafness, 18 per cent were deaf from meningitis, 8 per cent from measles, 7 per cent from scarlet fever and 7 per cent from influenza.

In 146 cases of congenital deafness, the parents were first cousins, in 90 cases the parents were second cousins, in 37 cases, third cousins, and in 20 cases, fourth cousins. This shows clearly the danger of intermarriage.

A great many of the cases studied show deafness in the families of the parents. In 701 cases the children had a brother or sister known to be deaf. There were a few cases where two or more children in the same family showed deafness.

Because of the marked differences in the sociological, psychological and educational needs of the two groups, the deaf and the hard of hearing, it is necessary to discuss them separately.

Estimate of Numbers—The Deaf

According to the January, 1930 issue of the *American Annals of the Deaf* the school statistics show that on October 20, 1929, there were: 12,239 deaf children in the 64

residential schools; 3,503 deaf children in the 114 day schools; 812 deaf children in the 18 private and denominational schools, making a total of 17,554¹ deaf children who are receiving special education considered appropriate for them in the 196 schools for the deaf.

Census reports indicate that in the whole population there are 48 deaf persons for each 100,000. This is probably an underestimate owing to the reluctance of relatives to report such cases. Of these over 37 per cent were under twenty years of age.

The following summary of state laws in regard to medical inspection in the schools gives an idea of the primary means of obtaining information as to the number and location of deaf and hard of hearing children:

School medical inspection of some kind is given in 42 states.

Medical inspection is mandatory in 16 states.

Specially trained persons for medical examinations are maintained in 23 states.

Examinations may be given by the teachers in 13 states.

The superintendent, principal, or teacher may examine in 3 states.

The following quotation from the United States Bureau of Statistics expresses the gist of existing laws in the states of Alabama, Connecticut, Georgia, Indiana, Maine, Massachusetts, Maryland, Missouri, Nebraska, Nevada, New York, New Hampshire, Pennsylvania, Utah, Vermont, Virginia, West Virginia, Wyoming:

Every child attending public school should be separately and carefully tested and examined at least once every year to ascertain whether such child is suffering from defective sight or hearing or any other disability tending to prevent such child from receiving full benefit of school work.

If these laws were compulsory they would be admirable; but in most cases little machinery exists for enforcing them,

¹ A later report furnished by the American Association to Promote the Teaching of Speech to the Deaf gives the total as 18,212.

and no law to compel attendance at a school for the deaf or a lip reading class when the fact of deafness has been established.

It is obvious, also, that most totally deaf children, the so-called *deaf and dumb*, would never be registered in a public school, and consequently would never be discovered through medical inspection. The hard of hearing, on the other hand, should greatly profit by it.

Some states are making earnest efforts not only to discover their deaf citizens of school age but to give them appropriate educational advantages. In 1928 all but five or six states had made some provision for discovery varying from the requirement of a census of defectives to allowing tests by teachers. A few states have organized departments controlling the education of handicapped children, in others the cities, aided by the state, foster such departments. Some knowledge, however, of the general field, acquired through attendance at many conventions and interviews with many classroom teachers of the deaf from almost every state, leads to the belief that thorough investigation and strict application of compulsory laws would greatly increase the numbers now enrolled in schools for the deaf.

The institution of more annual 4-A or *phono-audiometric* tests of all school children, and subsequent re-tests of those thought to have a defect, would greatly increase the number known to be hard of hearing. These scientific tests have even disclosed that unrecognized deaf children are in the regular schools.

Some of the early signs of impaired hearing are given in the Report of the Survey of Schools in Trenton, New Jersey. They are discharging ears, earache, noises in the head, facial expression, request for repetition of words, "pointing" one ear in the direction of the speaker, unusual mistakes in diction, peculiar qualities of the voice, listlessness, and inattention. Such children should immediately be referred to the medical examiner for special examination of the hearing.

There is good reason to believe that the 18,212 deaf

pupils in schools for the deaf would probably be greatly increased if adequate machinery for discovery and compulsory attendance existed. These potential candidates consist of:

Recognized cases of deafness whom parents refuse to send to the proper schools.

Recognized cases where ignorance of procedure and lack of legal authority keep them at home.

Recognized cases where remoteness from a school for the deaf deters or prevents attendance.

Recognized cases where superstitious fears or religious beliefs prevent attendance. (Such cases as these are found in both urban and rural communities.)

Recognized cases where the doctor has prophesied improvement in hearing and the parents are waiting for it.

Unrecognized cases of deafness, *wrongly diagnosed* as backward, feeble-minded, tongue-tied, lacking the power of speech, stubborn, inattentive, or wilful.

In all these cases there is often enough perception of sound to enable the child to recognize his name, and a few common words, when spoken loudly, and this fact is sufficient to cause a "not deaf" verdict at school and at home.

Such misunderstood cases spend years in public and parochial schools, writing a little, drawing a little, idling most of the time, losing the power of attention, and sinking into a lethargic state which closely resembles feeble-mindedness.

Sometimes a new principal, teacher or nurse discovers the fact of deafness and succeeds in making a proper school placement, but in the past numbers of these children have passed through the grades, have been pushed up because of their age, and have gone out to work or to a life of failure and ignorance, simply because no one recognized that they were deaf.

With the coming of systematic hearing tests given by teachers this situation improved somewhat although even

then many children slipped by. In communities, however, where the phono-audiometer is now used, school authorities find that it furnishes a decidedly more effective method of detecting defective hearing.

In most schools, children are occasionally found in some grades who have never spoken a complete sentence because they have never fully heard a complete sentence; who cannot read because they have never fully heard the teaching by which their companions learned; who, if they speak at all, speak a gibberish made up of single words which have been shouted at them, and a few "baby-talk" idioms.

If numbers of such children can be found in the high grade school systems of urban communities, it seems reasonable to believe that the numbers would be relatively much greater in communities where—so far—but little effort has been made to discover them.

Estimate of Numbers—The Hard of Hearing

The American Federation of Organizations for the Hard of Hearing is at work all over the country arousing interest in the needs of these children and instituting measures to discover them. Indeed it is due to the Federation that the first concerted effort in their behalf was instituted in 1924. Through its Committee on Hard of Hearing Children and some of its affiliated local groups, the work is in its present unusually progressive state. There is nothing like it in history; a national association of over two thousand workers devoted to the object of relieving the children of the country of the handicap under which they themselves labor.

Working under the auspices of the Federation, Dr. Fletcher and Dr. Fowler estimated in 1926 that: "14 per cent is not far from the percentage of pupils having a hearing defect. Since there are 24,000,000 public school children in the United States, there appear to be more than 3,000,000 having definite hearing defects." Many of these are still undetected and in far too many cases, the child or his parents will not acknowledge the impairment when it is discovered.

It should be borne in mind that there must be considerable impairment of hearing (estimated by some to be almost 30 per cent) before the person experiences much difficulty in understanding general conversation. It is before this stage is reached, however, that so much can be done in the way of prevention.

The total enrolment of deaf children in schools for the deaf, as previously given, undoubtedly contains some hard of hearing children who should be receiving their education in an environment of normal speech in the regular schools, with periodic lip reading lessons to supplement their poor hearing.

Many children thought to be mentally dull have only dulled hearing. Many of the "repeaters" have undetected and uncared for hearing defects. In two cities it was found that hard of hearing children repeated grades approximately three times more often than do other "repeaters." Hence the cost of hearing tests and adequate medical and educational provision for these children would undoubtedly be less than the loss occasioned by their years of retardation. In San Francisco it was estimated that the 65 grade repetitions of 27 hard of hearing children cost the city \$4,097.09.

All over the country there are hard of hearing children who need medical care and proper educational facilities, most of whom are not even known to either public health or school authorities. Among these are, of course, the potential candidates for schools for the deaf, already considered, and from this number also must be subtracted those who are being cared for in communities where proper testing is being carried out, efficient follow-up work is insured and lip reading classes are established. But when we have made allowance for all these there still remain large numbers who need special attention, both medical and educational, to bring them into line with children of normal hearing. We have an appalling number in the present generation growing up without adequate attention to their particular needs.

Audiometer Tests

As is the case with the deaf, the first step for aiding hard of hearing cases must be their discovery, and this can now be accomplished readily with the 4-A or phono-audiometer. In communities where this scientific hearing test is well systematized the procedure is usually as follows:

A competent operator goes through a district testing the children, from one to forty at a time, with the phono-audiometer. Opinion differs as to the grade at which it is practicable to test, varying from the second to the fourth. (This Committee believes that the test should take place at the earliest possible age.) Every case which shows a loss of hearing is re-tested as soon as possible and if there still remains a doubt as to the hearing impairment, a second re-test is made.

The school otologist then makes a careful examination of all children showing definite impairment and submits recommendations based on his diagnosis of each case. Medical treatment, a front seat in school with some special attention, or attendance at a part-time lip reading class are included in his suggestions. Many cases of severe deafness are discovered in this way and are referred to a school for the deaf.

The school nurse does the follow-up work. She visits the parents, accompanies the child to clinics, and sometimes under the direction of the clinic she gives the child treatment during school hours. She keeps in touch with the home, otologist, principal, room teacher, and lip reading teacher.

A large percentage of the cases of impaired hearing, if discovered early enough and remedial measures are undertaken at once, can, it is believed, be cured, in which cases no reference to a lip reading class is needed. Pupils assigned to lip reading classes are re-examined yearly or oftener, so that in case of improvement in hearing they may be discharged.

The procedure outlined above represents the best prac-

tice. Everywhere it differs in details. The important otological examination, unfortunately, is not universal.

The Rural Problem

Hearing tests, otological examination, and lip reading for hard of hearing children in rural districts are only just beginning, and it is unwise at this time to make definite statements regarding them. Reference is made, however, to the work of the Plymouth County Health Association, the survey of 2,200 children in a rural district of Massachusetts, under the auspices of the Evans Memorial for Preventive Medicine and Clinical Research; and the special survey of handicapped children in Washington County, Iowa.

EDUCATION

The Deaf

In a report of the Survey of Schools of Trenton, New Jersey, the following important statement is made: "Deaf children are usually much more retarded educationally, as well as mentally, than blind children. There is reason to believe that deafness retards the development of all the mental processes."

Methods. In the instruction of deaf children several different means of communication are in current use. In some schools wide latitude is given the instructors in the choice of the method used. Most of the day schools, many of the private schools, and several of the better known residential schools teach by oral methods only; speech and lip reading are taught from the beginning; residual hearing is used wherever possible, and the use of conventional signs as a means of communication is discouraged in every possible way as a deterrent to the acquisition and use of speech and lip reading.

In many of the residential schools there are certain classes consisting of pupils, who because of defective vision

or for other reasons, have found the acquisition and use of speech and lip reading so difficult that the use of the manual alphabet has been considered advisable as a means of communication. The pupil is taught to spell rapidly and clearly with the fingers of one hand, and to read rapidly what his teacher and classmates may be saying to him. As the pupil must spell out every word as in writing a letter, language is acquired, though speech and lip reading may not be. (The use of conventional signs is discouraged as a deterrent to the acquisition and ready use of correct English.)

The use of conventional signs as a means of communication was borrowed from the French and the Spanish, and during the first half of the nineteenth century, constituted the chief means of communication in schools for the deaf. These signs are ideographic, different signs or motions of the hands representing different ideas. The sign language is a grammarless language and does not follow the English order in presentation of ideas.

Some schools still permit the use of signs as a means of instruction on the ground that it facilitates the acquisition of ideas and that this compensates for any failure of the child to learn speech or the use of correct English.

In most of the older residential schools pupils were formerly instructed by means of conventional signs instead of by speech and lip reading. Today over 80 per cent of all pupils are taught by speech. With a few exceptions, speech is used exclusively in the day schools and for classroom instruction in most of the residential schools.

This description does not show how the oral method, manual method, and combined system work out in actual practice. The usual situation is this: the day schools, all but one, *teach* by the oral method and make strenuous efforts, which are but partially successful, to prevent their pupils from using signs. All communication between teachers and pupils is oral.

About six of the residential schools which are classed as oral, including the Clarke School, Northampton, Massa-

chusetts, and the Lexington Avenue School, New York City, which have always been oral, countenance no signs or finger spelling, and conduct all business on a purely oral or speech basis.

Most other residential schools teach a large number of their classes orally, and the rest by finger spelling or the manual-alphabet method, rigidly excluding all signs from the classroom. But many of them allow the vernacular of the chapel, the dining-room, the recreation hour, and the playground, to be conventional signs, from the first day of the child's school life to the last, consequently signs become the child's medium of thought.

Aside from the matter of the specific method of teaching the communication of thought by language (that is, oral, manual or combined), all the schools employ more or less similar methods of developing the ordinary subjects of the curriculum. Many are trying to improve their teaching to conform to the best modern educational thought; but there can be no question that more efficient teaching is needed to equalize the mental development of the deaf with that of normal hearing children.

The deaf child starts his school life without either speech or language, being in this respect subjected to an initial handicap of five years or more chronologically, and an even greater mental or comprehension handicap. After entering school he must acquire the fundamentals of language and speech by methods very different from those employed by hearing children. A vocabulary must be slowly built up, beginning with the simplest words; indeed a limited vocabulary never ceases to be a handicap to learning. A larger proportion of school time, therefore, must be spent on language and speech. After an adequate foundation is laid, the curriculum is approximately the same as for the hearing child. The subjects taught are those of the ordinary elementary and junior high schools and occasionally of the high schools.

The residential schools have in the past done much high grade, diversified vocational training, and the best of

them are still doing it. Rapidly changing industrial processes, however, necessitating expensive equipment have in many cases left schools teaching obsolete operations which still have manual training value, but do not prepare for actual employment. Some of the Western and Southern schools give highly practical and valuable agricultural training.

The day schools usually give such vocational training as obtains in the school system of which they are a part, and this is likely to be prevocational rather than truly vocational. Deaf children sometimes attend these classes with hearing children. Many pupils in the day schools, however, do not receive vocational training.

Because the deaf child is necessarily so restricted to formal instruction in the acquisition of new ideas and in gaining an understanding of his environment, extra-class activities assume a relatively greater significance.

Home Visits. It certainly helps when teachers can visit the homes of the children in their classes. Even if only once a year, such a visit can become a social event of high importance to the child and his family and it is always a source of enlightenment to the teacher. She can realize the actual distance from the home to the school and understand why the child is occasionally late. External evidence can tell her a lot and if she finds a home with many signs of poverty she can report the matter and enlist help from the social agencies. The teacher can do much to establish bonds between the family and the school which will grow stronger with the years. Further details of such a plan are found in the report on home visiting of the Horace Mann Day School for the Deaf in Boston, Massachusetts.

Summary of Education Methods. Schools for the deaf are residential and day schools. Because of geographical reasons both kinds are essential.

The average size of a class based on the number of full-time teachers is ten, some classes contain less but a teacher of the deaf should not be expected to handle more than ten.

Modern developments in the education of the deaf child have not kept pace with developments in the field of general education. No universities with large endowments and well-equipped faculties have attacked the problems of the deaf child.

On the whole, the tendency is toward the day schools if transportation facilities make them practicable. The number of pupils taught is far less than it should be, but methods of discovering the deaf and compelling attendance are improving every month since the utilization of the phono-audiometer in testing the hearing of all school children.

A good detection program for hard of hearing children will also discover deaf children for whom adequate provisions should be made.

Mentally deficient children with normal hearing and hearing children with speech defects are sometimes sent to schools for the deaf, owing to lack of adequate provisions for their education.

The methods employed in the education of the deaf are less flexible than they should be and greatly need to be revitalized.

Vocational training for the deaf is being adversely affected by the rapid changes taking place in labor processes of the present day.

The teachers in the schools for the deaf are, as a whole, hard working and faithful. Those who have received adequate training, or acquired it through years of experience are highly efficient. Yet the demand for efficient teachers is far in excess of the supply and many schools are suffering from poorly trained or untrained teachers who are only "better than none." Further, only a few of these teachers have had sufficient educational foundation and background to justify them in undertaking research on their own initiative.

Salaries are generally inadequate, although some of the Western states and a few large cities in the East maintain a respectable differential for their teachers of handicapped

children. New York City, for instance, has a salary scale which other cities might well follow.¹

Schools. There are 64 public residential, and 114 public day schools for the deaf. The locations of these are given briefly in the appendix, page 330.²

From the Educational Research Service of the National Education Association the following information is gained: "The 1928 report of the United States Bureau of Education shows that in 1926-27 the cost for each pupil in state schools for the deaf was \$500; in 1926-27 the cost for each pupil in private schools for the deaf was \$329." From a Minneapolis report it is learned that the average cost in 1927-28 of special classes for the deaf was \$309.41 for each pupil.

Secondary and Collegiate Courses. In some cases the state schools for the deaf include a high school course in their curriculum. There is no way of knowing how such courses really correspond to secondary courses in ordinary schools.

In a report of the Bureau of Education,³ 929 pupils are reported as taking high school courses. The day schools for the deaf seldom attempt any grade higher than the ninth, and this same report states that there are in the day schools 126 pupils in high school grades.

Both state and day schools, however, send occasional able pupils to regular high schools. Some of these graduate with honors, and a few go on to college and professional schools.

No statistics seem to be available to give exact returns for this phase of the education of the deaf except in regard to Gallaudet College at Washington, a national college for

¹ For further information regarding the organization, administration and supervision of special classes the reader is referred to pp. 583 to 593 in this book.

² For a detailed list, giving their exact location, number of teachers enrolled, methods of instruction used, and manual and vocational training, see *The American Annals of the Deaf*, January, 1930.

³ United States Bureau of Education, Bulletin 28, 1928.

the deaf supported by the United States Government. At present 123 students of both sexes are under instruction, receiving junior collegiate education at this institution.

The Hard of Hearing

Methods. The methods of instruction given to hard of hearing children vary more in the place and time of the lip reading lessons, than in the method used.

Lip reading (or speech reading), in addition to the regular grade work, constitutes the only requirement in the large majority of cases.

Some hard of hearing children need constant attention to their speech in order to keep it from deteriorating. The speech of others has become so poor, or was so poor because of the hearing impairment, that they are in need of the attention of a teacher trained in speech correction work.

The principal methods used are :

Müller-Walle or Bruhn Method

Nitchie Method as adapted by Samuelson

Kinzie Method

Jena Method

Newer or Whildin Method

The following are some of the present ways in which lip reading is given to hard of hearing children :

Itinerant teacher goes from school to school.

Children go once or twice a week for one period to a near-by school which is used as a center for their district.

One school building is set aside for classes for hard of hearing children and also for deaf children. While the hard of hearing children have their grade work and lip reading by themselves they naturally mingle with the deaf children during the recess periods as well as travelling to and from school.

Hard of hearing children leave their class and go

for a period of fifteen minutes or more to another room in the building where a specially trained teacher is in charge of a group of deaf children. While the deaf children are busy with their desk work, the hard of hearing child is given a lesson in lip reading, after which he returns to his regular classroom.

In some cities the itinerant teacher of lip reading cares for as many as eighty children.

In Baltimore a unique class of hard of hearing children of different grades is known as the Conservation of Hearing Class. These children had previously received lip reading lessons for six months, and as they did not make the desired progress they were changed to this class. It consists of one hard of hearing child from the building and fourteen from different parts of the city. They are placed in one room which is equipped with a group-audiophone set and in this way the resident teacher is able to make use of what hearing the children have. With what the children hear and with what they are trained to see, they change from backward pupils to normally advancing ones. The papers of one nine-and-a-half-year-old boy who had been considered dull since he entered school bore high marks, "excellent," "very good," "98 per cent," and so forth, thus showing that a few months of adequate training can prove that the trouble is *dulled hearing* and not *dulled mentality*. Three older boys were each four years retarded. They came into the Conservation of Hearing Class from grade 4 B, and in five months' time they were able to make grade 6 A. These few cases are indicative of what has been accomplished.

Number Receiving Instruction. The American Federation of Organizations for the Hard of Hearing reports that in December, 1930, the public school systems of 82 cities were giving periodic lessons in lip reading to hard of hearing children. Reports from 36 of these cities showed a total enrolment of 2,983 hard of hearing children. This number does not include any hard of hearing children who are being instructed with deaf children.

The Federation has often been asked: How many children in the elementary school systems should have lip reading instruction? This is a difficult question to answer as this type of special instruction is of very recent origin. Some figures have, however, been received relative to the number needing it. In a few cities where 4-A Audiometer tests have been given, there has followed a re-test and an otological examination, after which a recommendation has been made relative to the number needing lip reading. Because of the lack of adequate information it is unwise to make any definite statement, but it is probably safe to say that at least 1.5 per cent will need periodic lip reading lessons. An error in this figure would, we believe, lie on the side of conservatism.

Until a few years ago no provision for hard of hearing children was made in the public schools of this country except for those, noticeably deficient in hearing, who were occasionally sent to schools for the deaf.

Parents were usually very unwilling to permit this procedure when the change involved residence away from home. But as city day schools and classes for the deaf increased, the school authorities tended to dispose of many cases by persuading the parents to transfer their children to such schools. This procedure still obtains to a large degree in cities all over the country.

The hard of hearing child suddenly finds himself in a school where he can understand practically everything that is said; he learns lip reading readily; he is the superior in language to most of his companions, and instead of a feeling of inferiority he acquires one of superiority. If the school is a graded one he proceeds with the usual studies of the curriculum, doing well because here he receives a greater share of the attention of the teacher of the small special class. He often proceeds to high school with children of normal hearing where his acquisition of lip reading enables him to make good.

Such placing of hard of hearing children in schools for the deaf, however, is only a make-shift for individual cases,

and does not offer the proper solution for the general problem of the education of these handicapped children.

In the first place, there is not room for any considerable number of hard of hearing children in the existing schools for the deaf. If new provision has to be supplied for them it should be made to fit their needs and not the needs of the deaf.

In the second place, a hard of hearing child needs to be kept just as normal as possible, and placing him with the deaf tends to defeat this purpose. His needs would be best served in a small class of his fellows where he could hear the teacher's voice, the voices of the children as they recite, receive much individual teaching and learn lip reading systematically. If he cannot have all these advantages he should at least have a front seat, periodic lip reading lessons by a qualified teacher, speech correction and voice training if the trouble is serious or progressive, and a chance to carry on among normal children.

Yet here are some of the existing cases of children who live in suburban towns: one girl is too hard of hearing to make progress in school; another has been spending years in a class for retarded children, consisting mostly of big boys, some of them colored; a hard of hearing boy sat around in classes where for years he learned nothing but drawing; a girl wasted time for years because she could not hear what her classmates were saying during recitations. These four are typical of about ten hard of hearing pupils who entered the day school for the deaf in their near-by large city one fall.

Most of them spoke naturally, except for a certain blurred effect, but they had no habits of concentration or application. Their knowledge of all the subjects of the curriculum was far below their age, and they were distinctly *backward children* and so considered. In each case the school authorities in their suburban home town begged for their admission to the day school for the deaf of the near-by large city. The law of the state in which these children lived permitted any child too deaf for education in the public

schools to join the day school for the deaf; therefore the state paid their tuition and carfare. They were taught lip reading and the subjects of the curriculum slowly and carefully. Home visits were made by teachers and in every case parents reported improvement and satisfaction. Such children usually outgrow their feeling of inferiority, which is such a bitter burden to bear. Their hearing is stimulated by music and their sense of rhythm by dancing. They take part in the school plays and find themselves of consequence in their new world instead of class laggards as before.

There can be no doubt that it would be better if such children could have been taught adequately in their regular home school with supplementary lessons in lip reading. But when they do not learn in the regular school, and their home town does not furnish any instruction in lip reading, what is to be done?

Against such undoubted benefits to hard-of-hearing children in the day school for the deaf, the following disadvantages must be weighed:

Their progress is too greatly hampered by the slower learning deaf.

They are apt to acquire undesirable mannerisms and gestures.

They hear peculiar voices and enunciation.

They do not make use properly of what hearing they possess.

Borderline: Deaf—Hard of Hearing

There are various cases not belonging to any hard and fast classification which for convenience we will call *borderline*. For example a child who became hard of hearing at six years may have to go to a school for the deaf for a while at least. Perhaps improved methods and increased use of electric amplifiers may keep these children in the regular schools; at the present time, however, such cases have to be considered individually on their merits and local conditions.

The Blind-Deaf

This group is perhaps the most appealing, most sadly handicapped and most neglected as a class, of any special group. Their education should be first social and cultural, and then practical. It is very expensive, highly experimental, and more or less satisfactory in results. Yet what has been accomplished with some of these individuals under skilled teachers is indicative of the possibilities attending the education of the group if attempted under more satisfactory conditions.

The needs of these children are most ably described in two brief monographs by Corinne Rocheleau and Rebecca Mack¹ and Edward E. Allen, copies of which have been submitted for study, and free quotations from which are here made and gratefully acknowledged.

Because this Committee is dealing with the educational needs of this group, it lays emphasis on the term blind-deaf, deafness being the greater handicap educationally. We believe that too much stress cannot be placed on this fact.²

If any of these children retain a residuum or a distinct memory of either sight or hearing, or both, that fact is of tremendous importance to them and to the teaching of them. Individually speaking no two of these children are alike. They can, however, be grouped by considering various important factors such as present sense conditions, the age of the child at the onset of one, or both, of these handicaps, also consideration of which disability came first if both did not come at approximately the same time.

The more educable of these children should not be removed from their homes during the preschool period unless such removal becomes necessary for the relief and protection of the family. Relief for the mother may be needed.

¹ See Acknowledgments, p. 276, and Bibliography, p. 338.

² Further information regarding the blind-deaf is given by the Subcommittee on the Blind and the Visually Handicapped (Committee on the Physically and Mentally Handicapped, IV B).

When taken to school such children must have a special teacher and companion, who, under the principal, guides and controls their activities. Experience seems to favor the same teacher throughout the elementary training. Good and profitable habits must also be inculcated with kindly insistence. Education and ability without being socially acceptable will be of little value in life's struggle.

If they are placed in an elementary school for deaf children every subject will serve for language instruction and nowhere else is language taught with such persistency and precision.

The blind-deaf child must learn to articulate; to read speech through vibration, or to communicate by means of the manual alphabet; typewrite; read and write braille; and make use of other tangible apparatus.

When departmental class instruction is needed, it is probably advisable for the pupil to change to a school for the blind. Speech reading through vibration, finger spelling, palm writing and glove writing with blind fellow pupils thus becomes a part of his means of communication.

The problem of the blind-deaf is the most complicated of all educational problems, because: (1) it can be so variable in kind and degree; (2) its contributing causes are likewise varied; (3) it requires from the teachers not only the usual knowledge of pedagogic, but also of the highly specialized methods in use for the training of the deaf and of the blind; (4) it calls for after-care and follow-up work on the part of some welfare agency, an agency familiar with all these methods and also with the vocational problems of the deaf-blind.

Rocheleau and Mack comment further on the variability of blind-deafness. There are: (1) the totally deaf who are blind; (2) the totally blind who are also hard of hearing; (3) the totally deaf afflicted with poor vision; and (4) the hard of hearing with poor vision. The physical disabilities of many of these vary from day to day. Also all partially blind-deaf persons have a definite tendency to grow totally deaf and blind in time. It is therefore advisable to train

them as such, so that the inevitable transition will not find them unprepared.

The very young blind-deaf are like children yet unborn, souls to be created, and skilled creators must be found for them. No matter to what class the blind-deaf belong, or what special type of blind-deafness may be theirs, the greatest need is to educate them.

Opinions differ as to how this education should be given, Rocheleau and Mack say. Some educators hold for the pure oral method; others of equal experience contend that the blind-deaf are so terribly handicapped that in each individual case the general advancement of the pupil should be the paramount issue, all methods being good if they serve that great end. Ingenuity and resourcefulness are necessary ingredients in the make-up of the successful teacher of the blind-deaf.

Again, educators of the deaf feel that these blind-deaf children could be adequately cared for in existing schools for the deaf, if special methods were used and special equipment added. Educators of the blind feel just as strongly that as there is a blind side as well as a deaf side to these children, and, whereas the deaf are taught mostly by concrete methods while the blind are taught principally by abstract methods, blind-deaf children should spend at least a few years in schools for the blind. The problem is further complicated by the fact that very often neither schools for the deaf nor schools for the blind are prepared or disposed to accept blind-deaf beginners, for whom no special appropriation has been made, and no qualified teachers are available.

Rocheleau and Mack were able to record only unrelated efforts in the United States towards helping blind-deaf individuals, nothing having been done, so far, towards helping them as a class.

During the fifteen years of study and research carried on by them they gathered data on 660 cases of living blind-deafness. Of this number about 100 are children or adolescents. These known cases do not represent the total of existing cases and it is probable that there are today in the

United States many hundreds of unfortunate children who are partially or totally blind-deaf but who have never been reported as such; indeed the blindness and deafness are not always recognized. Not a single state is without one case of blind-deafness while the densely populated states probably have a large number of them.

Another recent study listed sixty-one blind-deaf children of whom only thirty-five are now in school.

Partially blind-deaf children are often classified as mentally slow, while the totally blind-deaf children, especially if they have been neglected, are often classed as being idiots, or at least feeble-minded.

The usual intelligence tests should *never* be applied to the blind-deaf. A long and painstaking trial of the child has first to be made in and out of the classroom. The blind-deaf and partially blind-deaf are extraordinarily variable in their reactions to such tests due to the ever varying degree of their physical handicaps, and the care and attention given or withheld, in preschool years.

Rocheleau and Mack believe that insane asylums harbor some merely blind-deaf patients with outward idiotic symptoms but with normal intellectual faculties which could have been developed. A test-case was made of a young Canadian girl who at sixteen years of age was in a pitiable condition physically and pronounced an idiot mentally. She developed in a manner which astonished not only her teachers but the medical men who had declared her education to be impossible.

The Deaf-Feeble-minded

These are children who are definitely below normal mentally, and also deaf or seriously hard of hearing.

Feeble-mindedness is, of course, the more serious disability.

Far too often children thought to be mentally dull find themselves placed in this group when they have only dulled hearing. The diagnosis of the present day is not always ade-

quate. Hearing children who are feeble-minded are many times thought to be deaf because of improper diagnosis.

These children are often found in schools for the deaf for lack of other provisions for their care and training.

Preschool Children with Auditory Defects

An important field which is entirely neglected except in a few scattered instances is that of the preschool child with an auditory defect.

As late as 1925 such an organization as the National Congress of Parents and Teachers in its Summer Round-Up made no specific report on ear conditions. After correspondence was opened up by the Committee on Hard of Hearing Children of the American Federation of Organizations for the Hard of Hearing, the Round-Up became conscious of this omission. In 1929 152 hearing defects were reported, and treated. The 1930 report shows an increased realization of the importance of attention to condition of ears, 2,100 hearing defects and 565 corrected.

The phono-audiometer as designed for testing the hearing of all children in the third grade and above, is not satisfactory for testing the hearing of preschool children. The record giving the two-digit figures has been used, however, when the child told the tester what it heard through the receiver and the tester wrote the figures as repeated to her, on the test sheet.

During the past year, Dr. Douglas Macfarlan of the University of Pennsylvania, Dr. H. M. Williams of the University of Iowa, Dr. Hugh Grant Rowell of Teachers College, Columbia University, and Dr. Knight Dunlap of Johns Hopkins University have been conducting experimental tests to find an adequate way of detecting the degree of hearing impairment in preschool children. While nothing entirely satisfactory has been produced to date, many interesting data have been obtained and the experiments will continue. The Bell Telephone Laboratories has assisted in some of these experiments. Considerable skill is needed in conduct-

ing such tests, and many factors of error may enter in. A child who has not heard, for instance, is likely to report that it hears when it is the vibration of sound that it feels if music is used as a test.

Health demonstrations, nurseries, and settlements in New York City have experimented with individual tests during the past few years but with no satisfactory results.

Nineteen children of the preschool age have been treated in the clinic of the New York League for the Hard of Hearing and five are receiving lip reading instruction there.

The Central Institute for the Deaf in St. Louis has maintained a Preschool Age Nursery for Deaf Children for the past sixteen years. During the past school year forty deaf children between two and one-half and seven years of age were enrolled. They are in charge of teachers who have had from eight to ten years' experience in such work. The General Education Board of the Rockefeller Foundation has given additional support to this work and a psychologist is making a special study of the psychology of the deaf child, concentrating his observation on the preschool group.

After thirty years of service as a nursery school for little deaf children The Sarah Fuller Home closed its doors in 1926. The income of the endowment is now used in teaching deaf children of preschool age in their homes and instructing their parents how to handle the situation. During the past year 3 teachers visited 27 children, each teacher making 2, 3 or 4 visits a week. In homes where a foreign language is used the teacher's task is a difficult one, but such mothers of little deaf children are sadly in need of the help, encouragement, and sympathy which they eagerly receive.

The teaching consists of sense perception lessons, games planned to teach the child attention, cooperation and lip reading. If the child has any hearing the teacher tries to train it, and towards the last part of the course a very little speech work is attempted if circumstances are favorable. Great caution has to be exerted, however, because as soon as the parent hears the child utter words she tries to teach him speech herself, and is liable to ruin his voice.

The little candidates for these classes are discovered through school nurses, clinics, and particularly through the principal of the day school for the deaf.

TRAINING OF TEACHERS

Because of the unusual requirements for teachers of this type of special classes as well as the great difference in the needs of deaf and hard of hearing children, it has seemed advisable for those on this Committee who are qualified to do so, to state briefly some of the requirements.¹

The Deaf

The deaf child is greatly handicapped because he starts his school life without either language or speech. Teachers of deaf children require a high degree of special technique to master the difficult, tedious processes which are necessary for the fundamental education of these children. It is obvious, therefore, that the proper training of teachers deserves most thoughtful consideration.

Surveys of the results of instruction in schools for the deaf have shown that although the children are taught in very small groups with the maximum of individual instruction as compared with pupils in the regular grades, the deaf child, nevertheless, seldom overcomes the initial retardation of five or more years; that the rate of elimination is abnormally high, and that only the occasional deaf child is prepared for high school work by the age of twenty.

On the other hand, the innate capacity of the deaf child to learn is clearly demonstrated by his achievements in athletics, in his vocational courses, and in his after-school record as an industrious, self-supporting, and good citizen.

Obviously, therefore, there is much to be desired in the field of his formal education, and any improvements there must be the result of better methods and better teaching.

Modern developments in the education of the deaf child

¹ More detailed information is given in section on the Training of Teachers, p. 553 of this book.

have not kept pace with developments in the field of general education for two reasons:

First, education for the deaf has not had the benefit of endowments and facilities for research; teachers have been burdened with the routine job of teaching; and educators in administrative positions have, from choice or necessity been busy with administrative problems,—improving physical plants, equipment, and so forth. It has also been necessary for them to try to obtain larger appropriations to attract better teachers.

Second, few teachers with educational foundation and background sufficient to justify them in undertaking research on their own initiative have been attracted to the profession. A few such teachers and educators there have been, and any progress made has been due to their initiative and effort.

Registration at Volta Bureau

The American Association to Promote the Teaching of Speech to the Deaf established at the Volta Bureau, Washington, D. C., a department for registration for teachers of the deaf. This was done with the desire to give some measure of recognition to teachers of deaf children and to assist schools in the selection of efficient teachers, as well as to help raise the standards of teacher preparation.

The requirements for such registration including term of registration, as well as definition of terms, are, in part, as follows:

Applicants to be at least twenty years of age, and of high intelligence, with at least two years of teaching experience.

Two years of college work, or approved junior college or normal school; one year of training for the oral teaching of deaf children. Two summer normal training certificates together with two additional years of successful teaching experience may be accepted in lieu of the one year course in training.

If applicant is graduate of a four-years' high school course she must have completed two years of training for the oral teaching of deaf children. Two summer normal school certificates with two addi-

tional years of successful teaching experience may be accepted in lieu of the above.

Teachers possessing a baccalaureate degree from a standard university or teachers college, who have completed at least one year of special training in the teaching of deaf children, are granted collegiate registration. Provisions are also made whereby teachers who hold lower grade certificates may, through college work, convert them into certificates of higher grade.

The registration is for a period of four years. To secure an extension of the registration there are certain requirements to be met. All applications for renewals must be sent in through the superintendent and bear evidence of successful teaching. Books as given in the reading course should be reviewed, contributions made to the professional literature, and social equipment added to by travel.

Training Centers. There are less than thirty training schools for teachers of the deaf.

Massachusetts.

The American Association to Promote the Teaching of Speech to the Deaf subsidizes one at Clarke School, Northampton, which gives a one year's course to about ten students a year. The course is an admirable one. Candidates must be normal school or college graduates. Massachusetts pays the tuition of two or three graduates of State Normal Schools at Clarke School, when it can induce any candidates to take the course.

Washington, D. C.

Gallaudet College maintains a normal training class for college graduates, which for many years has supplied many high grade principals and teachers.

Michigan.

The State of Michigan at its State Normal College at Ypsilanti, maintains training courses for teachers.

California.

California has recently provided at its State Teachers College a training course for teachers.

Indiana.

In Indianapolis there is a training class at the State School.

The following completes the list of training centers:

New York.

Public School 47; The Lexington Avenue School; St. Joseph's Institute, New York City, and St. Mary's Institution, Buffalo.

Pennsylvania.

Mt. Airy, and the Lansdowne Sanatorium School.

Connecticut.

Mystic School, Mystic.

Illinois.

The Parker Practice School, Chicago.

Missouri.

The Central Institute, St. Louis.

Alabama, New Jersey, Maryland, Virginia, West Virginia, North Carolina, Ohio, Indiana, Michigan, Oklahoma, Arkansas, Wisconsin, have training centers at their State Schools for the Deaf.

All these places do not, however, turn out many more teachers than are needed to supply their own demands. Indeed, in most cases, the demand for trained teachers has been the reason for the institution of training classes.

The A. A. P. T. S. D. has been conducting summer schools for teachers in cooperation with leading universities or teachers colleges. A representative faculty has offered courses for teachers of the deaf with experience, for which college credit has been given by the cooperating college or university. Such schools have been conducted in cooperation with the following: 1928, University of Virginia; 1929, University of Kansas, Kansas City; 1930, Milwaukee State Teachers College; and, in 1931, Johns Hopkins University. National in character, with the prestige of this Association and of the cooperating university, these summer schools have made a distinct contribution in raising the standards of teaching the deaf.

The Hard of Hearing

The teachers of hard of hearing children are not confronted with problems as numerous or serious as are the teachers of deaf children.

The hard of hearing child has a foundation in speech and language and this is invaluable. There are, however, apt to be defects in both speech and language dependent upon the degree of hearing loss and also the age at which the impairment occurred.

The difference in the problems faced by the respective teachers is often as much a difference in degree as in kind.

It is possible for teachers who are otherwise adequately prepared to receive sufficient training to teach lip reading to hard of hearing children in a six weeks' course of recognized standing, or a college extension course of eighty to one hundred hours.

Minimum Requirements. For the information of those seeking to know the requirements of such a course, the American Federation of Organizations for the Hard of Hearing through its Teachers Council drew up in 1927 the following suggested set of minimum requirements:

Applicants for Courses in Teaching Hard of Hearing Children

1. Two years of college or normal school work and three years' successful experience in teaching children, or five years' successful experience in public schools or schools for the deaf.
2. Clear diction, free from unnatural mannerisms.
3. Normal or nearly normal hearing.
4. Reputable character, pleasing personality, attractive personal appearance and neatness.

Teachers of Hard of Hearing Children

1. Certification from a school of speech reading which has graduated not less than five normal students, or three years' successful experience in teaching speech reading to children.
2. Clear diction, free from unnatural mannerisms.
3. If deafened, ability to read the lips.

Practical work in connection with the training course is

indispensable. The knowledge and theory of teaching lip reading are less than one-half the problem confronting the training teacher. It is important that methods of teaching lip reading to the hard of hearing adult should not be confused with those of teaching hard of hearing children.

It is invaluable when a teacher of hard of hearing children has been a teacher of normal children. Some believe that a teacher of hard of hearing children should have had some experience as a teacher of the deaf. While realizing the value of this, especially for one who may ultimately become a trainer of teachers, this is not an essential requirement. Exceptionally good results have been obtained where the regular grade teacher, acquiring deafness, has taken the training course in lip reading and been transferred in the school system from regular grade work to that of special classes. One superintendent expressed great satisfaction in thus being able to retain on his rolls one of his most efficient grade teachers whom he would otherwise have lost because of hearing disability. Another superintendent considered himself fortunate in inducing a hard of hearing lip reading teacher in another city to accept a position as such in his. Provided that a candidate is otherwise qualified to do so, she should be permitted to take the training course for teachers of lip reading even though she herself has hearing impairment.

Training Centers. It is only since 1922 that special courses have been available to those who wished to become teachers of hard of hearing children. The first one was offered by the Brooklyn Teachers Association, Brooklyn, New York. Since then courses have been offered each year in winter or summer sessions or both.

Because of the newness of the work it seems appropriate to show appreciation of these pioneer training teachers by naming them here: Martha E. Bruhn, Alice Howe Hatton, Estelle E. Samuelson, Agnes Stowell, and Olive A. Whildin.

The places where training has been or still is obtainable (the date indicating when the course was instituted) are as follows:

New York

Brooklyn Teachers Association (1922)

Massachusetts

Boston University, Extension Dept. (1923)

Massachusetts Department of Education (1924)

New York

University of Rochester (1925)

Michigan

Michigan State Normal College (1925)

Maryland

Johns Hopkins University (1926)

Illinois

Chicago Normal School (1926)

California

University of California (Berkeley) (1926)

Massachusetts

Boston Teachers College (1926)

California

University of California (Los Angeles) (1927)

Michigan

Day School for the Deaf (Detroit) (1927)

Ohio

Western Reserve University (Cleveland) (1928)

Central Institute for the Deaf (1928)

Nebraska

University of Nebraska (Omaha) (1928)

New York

Teachers College, Columbia University (New York City) (1928)

California

San Francisco Teachers College (1928)

Vermont

New England School of Speech Reading (Burlington) (1929)

Maryland

Teachers College, Johns Hopkins University (Baltimore) (1929)

Massachusetts

Müller-Walle School of Lip Reading (Boston)
(1929)

North Carolina

Carolina Studio of Lip Reading (1929)

California

Kenfield School of Lip Reading (1929)

California

Extension Division, University of California (Oakland) (1930)

South Carolina

Winthrop College (1930)

New York

Hunter College (New York City) (1930)

Buffalo State Normal College (1930)

Wisconsin

American Association to Promote the Teaching of Speech to the Deaf in session at Milwaukee (1930)

STATE LAWS REGARDING EDUCATION OF HANDICAPPED

Governmental interest in education is shown by the laws it formulates. All but five or six states have compulsory education laws affecting the deaf, but these laws are unevenly administered.

The vital question is, "How are the deaf discovered?"

In 1927 California passed a law (Act 7516) making deafness reportable by physicians, nurses, and parents to city or county superintendents. The superintendents are required to register the deaf child, to inform the parents of the location of the nearest school for the deaf, and to notify the schools of the deaf child's name and address. The text of the law, however, indicates no compulsion as to attendance.

Some states employ field officers, who track down every rumored case of deafness, and by persuasion or legal measures compel the child to attend a school for the deaf. Iowa has developed an admirably adequate system for this purpose,

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To the knowledge of the Committee there are no laws designating the hard of hearing as such and covering their needs as a group. Further, we have found no law requiring their attendance at lip reading classes.

The United States Bureau of Education compiled in 1928 a summary of the legislation of the various states relating to the compulsory education of handicapped children. Those relating to the deaf will be found in the Appendix of this report.

WHAT SHOULD BE DONE

Diagnosis—Psychological and Educational

There exist at the present time many tests for the educational and psychological examination of hearing children, but very few of these are suitable for the examination of the deaf and hard of hearing. Only for one test, the Pintner Primary Non-Language Test, do we have adequate standards for deaf children and even in that the standards are for a restricted range of ages from about ten to thirteen.

Adequate measures for psychological and educational diagnosis should be developed as follows:

Intelligence Tests. There are a few tests and scales in existence which would seem suitable for the deaf and the hard of hearing. These should be tried out on a large number of cases and standards established.

At present we have norms for deaf children for one test for a few ages. We have no group test for young deaf children during the first few years in school, and this is very important for the early classification of children as they enter school. Research should be started with the new Pintner Primary Non-Language Test, and if this proves suitable, standards for the deaf should be established. The Pintner-Paterson Performance Scale has been constructed for the more thorough individual examination of children, and it appears to work very well. However, no extensive work with this scale has been undertaken with the deaf and no norms for the deaf are available.

In England, the Drever-Collins Performance Scale has been constructed for deaf children and a recent study reports that they do as well as hearing children on this scale. These findings should be checked by tests in this country by means of both the Drever-Collins Performance Scale and the Pintner-Paterson Performance Scale on comparable groups of deaf and hearing children. It is important to know to what extent the deaf differ from the hearing in intelligence and whether, as English reports suggest, they are equal to the hearing on one type of intelligence. In addition to these specific intelligence scales, there are other tests in use with hearing children which might be adapted for use with the deaf. These possibilities should be investigated.

With reference to the hard of hearing, the Committee knows of no study of their intelligence. We do not know whether they are below or equal to hearing children in any kind of intelligence. Furthermore, we do not know which intelligence tests for the hearing are suitable for the measurement of the intelligence of the hard of hearing. Many verbal tests, not suitable for use with the deaf, could undoubtedly be used with hard of hearing children. Several of these should be tried out in addition to the non-language tests for the deaf, and comparisons should be made between the three groups: the deaf, the hard of hearing and the hearing.

It is important to have several thoroughly standardized tests, both group and individual, for the classification of deaf and hard of hearing children in school, so that the incidence of feeble-mindedness among both groups may be better known than at present. The general distribution of intelligence of both groups must be known so that we may plan more adequately their educational and vocational careers.

Educational Achievement Tests. There exist standard tests for most subjects taught in hearing schools by means of which the educational progress of children can be accurately measured. To some extent such tests have been used in deaf schools, and in general, the deaf have been found to be extremely retarded as compared with the hearing.

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There do not seem to be any similar comparisons between the hard of hearing and the hearing.

Such comparisons are important and more of them should be made. However, it is more important for educators of the deaf to have educational tests based upon the course of study found in deaf schools rather than in hearing schools, and no such tests exist. The hearing child moves through school more rapidly than the deaf child and hence tests for the hearing are apt to be too broad for the measurement of the slower progress of the deaf. A thorough survey of what is being taught in schools for the deaf in the United States should be made, including not only the usual academic subjects, but also the practical and vocational subjects usually taught in such schools, and then educational tests based on this survey should be constructed and standards for the country at large established. Teachers of the deaf could then judge their own work better, in the light of general standards and in accordance with the intelligence of their pupils as based on the intelligence tests thus described.

A similar, but probably a simpler, problem exists with hard of hearing children. An educational survey of their attainments should be made to see if they are keeping pace with their hearing schoolmates. We have assumed without question that the course of study for the hearing child is also the best for the hard of hearing, but this should be investigated.

What does deaf education achieve at present and what should it achieve, are questions which cannot be properly answered until we have adequate standardized educational achievement tests for all subjects taught in schools for the deaf.

Tests of Speech and Lip Reading. Speech and lip reading (or speech reading) are two important subjects in schools for the deaf which find no counterpart in schools for the hearing. An enormous amount of time is spent on training children in these two skills. Whether the time spent is justified by the results is not known. Whether the allotment of time to such skills during the various stages of the child's

school career is the wisest or not, is also not known. Whether the time expended in school is justified by the use made of such skills in after-school life is not known and has been questioned by some authorities. As much training in speech and lip reading as possible has been assumed to be a good thing without question and no attention has been paid to the loss of time and energy thus diverted from other knowledges. The first step necessary to investigate the present practice is the construction of objective measures of these two skills so that we may know exactly how much is being accomplished at the present time. Such tests will then tell us how rapidly a child progresses in accordance with his basic intelligence, the amount of hearing he possesses, and the age at which he became deaf. It may well be that a certain minimum of intelligence is necessary to profit from training in speech and lip reading. By means of these tests we shall be able to measure the amount of speech and lip reading which deaf adults make use of in their after-school life, and thus arrive at an estimate of the value of our present school instruction.

The construction of lip reading tests should continue along the lines indicated by Fusfeld and Day by means of standardized series of words and sentences to be spoken by the living person. More objective tests by means of moving pictures should be tried. Intelligibility of speech might be measured by the judgments of trained observers. More objective tests depending upon the mechanical recording of samples of speech should also be tried.

Adequate objective tests of speech and lip reading, as well as objective tests of so-called manual methods, are fundamental for a removal of the question of the value of oral and manual methods of instruction from the realm of emotional controversy over into the realm of calm matter of fact.

Mechanical Aptitude Tests. Since the vocational training of the deaf and hard of hearing child is extremely important for their future place in society, all kinds of mechanical aptitude tests should be tried with them. There are indica-

tions that the deaf are not nearly so much retarded, perhaps not at all, in their motor-sensory development as in their abstract intelligence. Motor and physical tests of all sorts should be tried out. Whatever assets in these fields the deaf and hard of hearing may possess should immediately be seized upon, and diligently cultivated throughout their school career. At present, however, we know very little, definitely, about their motor and physical abilities and their mechanical aptitudes.

The Preschool Deaf Child

The value of preschool training for the hearing child seems now to be thoroughly established. A study of the preschool deaf and hard of hearing child is urgently needed, and the techniques now used for the study of hearing children should be tried out with the deaf. We should learn a great deal about the intellectual abilities, the motor and sensory capacities, and the personality, character, and emotional traits of the deaf and hard of hearing by a thorough psychological study of these children of preschool age. In this connection the establishment of a nursery school for deaf children, where research could be carried on, is urgently needed.

Personality and Character Qualities

The objective measurement of personality traits, character traits, and emotional factors is now fairly well established for the hearing. It would be well to begin the study of such traits among the deaf and the hard of hearing, both children and adults. The adjustment of the deaf to society is peculiarly difficult and it is, therefore, necessary to make fundamental studies in this field in order later to help in such adjustments. The emotional reactions of the deaf at all stages of their life need to be studied. The adult who begins to lose his hearing is frequently confronted with many difficulties in readjusting his life. Emotional difficulties of all kinds are likely to arise. Psychological research in this field would prove of decided value.

EDUCATION

A thorough survey of the courses of study in schools for the deaf should be undertaken, in order that the question of a reorganization of the present curricula might be faced. Curriculum investigations are at present leading to new curricula in hearing schools. In all probability much that is obsolete still exists in schools for the deaf.

Methods of Instruction. The value of different methods of teaching must be thoroughly studied as soon as the necessary tests and scales have been constructed. Extensive experimentation will be necessary in order to discover the best methods of instruction for children of different degrees of native ability, different degrees of hearing, and different ages of becoming deaf. The training of the residual hearing of the deaf seems to be very important and should be further investigated. The use of kinesthetic-tactual methods is promising and their proper place in the total education scheme of the deaf should be determined. Similar investigations are necessary for hard of hearing children, particularly with reference to the amount of special training in a separate class or school that may be required, this depending on basic intelligence.

Vocational Training. The deaf and hard of hearing face great difficulties in finding suitable occupations after leaving school. There should be a thorough study of all occupations in order to discover those suitable so that training in school may be directed towards them. Contacts with industry and business should be made and employment bureaus must be kept informed about the abilities of the deaf and hard of hearing. In the schools themselves, more adequate vocational training should be offered and a sound system of educational and vocational guidance developed.

Higher Education. Those among the deaf who possess the requisite ability ought to have an opportunity for college education. Some educators maintain that the deaf should attend the regular colleges for hearing students; at the same time there exists a special college for the deaf

alone. The function of this college in the total scheme for the education of the deaf should be more clearly defined.

A complete study should be made to determine the educational needs of the graduates of the secondary schools. These should be based upon the opportunities open to the educated deaf graduate. To this end a social and educational survey should be made of the alumni of the college. Accurate data should be secured relative to the amount of hearing, age at which deafness occurred, the vocation pursued, the economic competency of the alumnus, and so forth. In the light of such a survey, a study should be made of the curricula of the college, especially as regards the opportunity for vocational training and that social training which would best fit the individual for a satisfactory adjustment to society despite his handicap of deafness. Such a study might explain why so small a proportion of the students finishing secondary schools for the deaf, avail themselves of the opportunity for collegiate education.

MEDICAL

Vision in the deaf and hard of hearing does in a large measure the work of hearing, according to Dr. Charles Scott Berry. It is an important factor in relation to deafness and it is, therefore, especially important that a careful visual examination be made of all deaf and hard of hearing children as soon as they are discovered. Conservation of vision should go hand in hand with conservation of hearing. If defective vision is found, it should be referred to the oculist and corrected at once if correction is possible, otherwise it should be conserved. Without adequate vision, deaf and hard of hearing children are seriously handicapped in learning speech and lip reading.

Mention has already been made in this report (pages 285 and 286) of the most adequate method of testing the hearing of all school children above the third grade, i.e., the phono-audiometer.¹ As has already been stated, it discovers

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not only slight impairment in its incipency but has disclosed cases of very severe deafness which had not been recognized as such.

Hard of Hearing Children. Not only have plans been evolved for the medical treatment of hard of hearing children but they have been tried and proven. This Committee recommends their adoption on a country-wide scale.

A plan was presented by Edmund Prince Fowler, M.D., and Harvey Fletcher, Ph.D., in a paper read before the Section on Laryngology, Otology and Rhinology at Dallas, Texas, in April, 1926, and subsequently published. It is offered here as a sound and practical procedure for the detection and medical treatment of hard of hearing children of school age.

Briefly the procedure is:

Preliminary hearing test in groups of forty or less, in a quiet class room, by a competent tester and assistant with the 4-A or phono-audiometer, obtaining of history as required on test sheet.

Inspection on the same day (after school hours if necessary) of the test papers in order to determine those to be re-tested.

Re-test on the following day of those showing a certain hearing loss (about 18 per cent of the total).

Tone range audiometer test of those still found to be low in hearing capacity, by same tester and assistant.

Careful otological examination and diagnosis by a competent, paid otologist. Competent otologists will have their own procedure for examination and diagnosis.

The recording on a prepared sheet of all the important data from the above tests for each hard of hearing child.

A note to teachers through the principal, directing that front seats be given to the hard of hearing children.

A note to each parent or guardian stating that the child is slightly, moderately, or markedly hard of hearing in one or both ears, and that he should be sent to a first-class ear clinic or a competent otologist to de-

termine what, if anything, can be done to improve the hearing and prevent the progress of the condition. The parents should know that a seat near the front of the classroom will be provided for the child. Such a statement will aid in impressing on them the fact that the hearing difficulty is a real one.

A check-up to learn whether the child has been cared for as above outlined, and, if this is not the case, the sending of a duplicate notice to the parent or guardian. Careful filing of the records, so that changes from time to time may be noted thereon and knowledge as to the detection of incipient, and progress of promising, cases be thus gained.

Regular yearly testing of the whole school body by the foregoing procedure.

The establishment of special clinics, probably as departments of our present hospitals, for studying and handling difficult cases.

The Deaf. Every pupil in schools for the deaf should be subjected to the most rigid physical examination at least every year. The first examination should invariably include all blood tests, including a Wassermann, basal metabolism, and a blood chemistry.

Based upon said examination a diet régime should be decided upon which would promise the maintenance of the highest physical development.

Plans for physical exercise and play should be outlined in conformity with the highest possible physical development.

Each school should have a counseling medical board which should include one otologist.

The Preschool Child. The program as outlined does not include the preschool child. Adequate means for the detection of hearing impairments in such young children are only now being investigated, as has been previously stated, and must be further developed and perfected.

However, all physicians engaged in child health examinations should be required to know how to make ear, nose,

and throat examinations periodically, in order to discover pathological conditions that may lead to hearing impairments.

Periodic and repeated otological examinations should be encouraged. The importance of good sight to supplement poor hearing should be stressed.

A program in aural hygiene for the education of laymen will help the situation.

Clinics. Cities must be made to realize that the detection of deafness is not enough and that the children so found must have the use of available clinics if the parent or guardian cannot provide adequate care. It was in Rochester, New York, that the first deafness prevention clinic was established by Dr. F. W. Bock.

A model research clinic, which others would do well to study and copy, is that operated by the New York League for the Hard of Hearing at the Manhattan Eye and Ear Hospital under the direction of Dr. Edmund Prince Fowler.

The University of Pennsylvania also maintains a Deafness Prevention Clinic under the direction of Dr. Douglas Macfarlan. Preschool age hearing tests are especially considered here.

Legislation

No plan of detection and medical treatment will be successful unless provided for by state legislation. Such law should designate that there be adequate hearing tests conducted annually in the schools to provide for the early detection of hearing impairment; that annually the re-test of those showing a defect shall follow the initial test; that those showing hearing impairment shall be given an otological examination for diagnosis; and that necessary treatment be provided for prevention (the elimination of potential deafness cases) and conservation of hearing.

TEACHER TRAINING

Teachers of the deaf should have a broader foundation in general education, with special training in psychology, educational theory and the technique of original research.

With such foundation, together with special training in the special technique of teaching deaf children, these teachers would have the self-confidence to evaluate, and modify classroom methods, test results and attempt new procedures in an effort to speed up the processes of the education of the deaf child.

There should be more rigid requirements for admission to training courses. The prerequisites should be high school graduation and two years of normal school or college training as a minimum; at least one year of successful training experience with normal children is desirable. Very thorough grounding in English grammar and syntax is essential.

There should be broader curricula for the training of teachers. Training should include very thorough courses in the anatomy and physiology of the organs of hearing and speech; the physics of sound; phonetics; voice development and placement; lip reading (or speech reading); the testing and training of residual hearing; language development for the deaf child, including vocabulary building, methods of sentence construction, and development of language comprehension and appreciation; special methods in presentation of religious education, geography, arithmetic, and so forth; the social and economic problems of the deaf; the psychology of the deaf child; practice teaching under supervision as an essential. Not less than one year of training to be the minimum requirement.

Courses should be provided for superintendents, principals, and supervisors to orient them into this special field of education.

Fellowships should be provided for gifted teachers who could be induced to undertake research, and for trained educators of demonstrated ability, who may qualify for administrative positions in schools for the deaf, to direct and foster research.

As deafness is a serious economic handicap, vocational guidance and training are of major importance; courses for teachers of vocational courses should be carefully planned to meet the special need of the deaf.

The training of teachers of hard of hearing children, though not of so technical a nature as that of the training of teachers of deaf children, is in need of higher requirements than have sometimes been the rule. The fact that the hard of hearing child has established speech and language is the chief reason on which the differences in requirements are based.

RECOMMENDATIONS

1. This Committee recommends that any and all of the research recommendations of the Second Conference on Problems of The Deaf and Hard of Hearing described in Number 88 of the Reprint and Circular Series of the National Research Council, Washington, 1929, be put into execution as soon as possible.

2. A more accurate term is needed for those here designated as hard of hearing. It should be based on speech and language ability. The difference between the two groups is not fundamentally one of degree of hearing but of difference in educational, psychological, and sociological condition due to the early and natural acquirement of speech and language by the hard of hearing and their ability to enter more naturally into human intercourse because of this acquisition.

3. *Laws.* The laws providing for the adequate detection of deaf and hard of hearing children, as well as for their compulsory school attendance, should be more carefully drawn and emphatically enforced.

4. *Survey.* The following surveys should be made:

Extension and continuance of surveys conducted in some cities for the detection of auditory deficiency among school children and the determining of the degree of deficiency.

A survey of children classed as mentally deficient or retarded to ascertain, by means of adequate scientific hearing tests, whether their hearing is normal.

A survey of the personnel engaged in teaching the deaf and the hard of hearing.

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A survey of teacher training centers, courses of training, and so forth.

A survey of laws requiring aural examinations of school children as a basis for detection at such early age that remedial treatment would be possible.

5. Adequate tests for the educational and psychological examination of the deaf and hard of hearing children should be developed.

Research started with tests such as the new Pinter Primary Non-Language Test and standards for the deaf established.

Establishment of norms for the deaf by means of the Pintner-Paterson Performance Scale, and others of similar character.

Checking in this country of findings made in England by Drever-Collins Performance Test.

Possibility of adapting to the deaf other tests in use with hearing children.

Trial of various present tests for measurement of the intelligence of the hard of hearing.

Test comparisons among the three groups; the deaf, the hard of hearing and the hearing.

Development of thoroughly standardized tests, both group and individual, for the classification of deaf and hard of hearing children in schools in order that the incidence of feeble-mindedness among both groups may be better known.

Determination of general distribution of intelligence of both groups so that more adequate plans may be made for their educational and vocational careers.

Construction of objective tests of speech and lip reading.

Development of mechanical aptitude tests for the deaf and the hard of hearing.

Study of different methods of teaching as soon as necessary tests and scales have been constructed.

Further investigation of the training of residual hearing and use of kinesthetic-tactual methods.

6. *Courses of Study.* Thorough survey of curricula in schools for the deaf; construction of educational tests based on this survey; establishment of standards.

Thorough survey of courses of study in schools for the deaf; comparison with courses of study in schools for the hearing.

Comparisons of courses of study for hard of hearing children with those for hearing children.

Investigation of present practice of time spent on speech and lip reading and survey of practical and educational value of these methods of instruction.

Study to determine maximum possible use of residual hearing.

Study of the maximum possible use of visual education.

Investigation of amount of special training in a separate class or school depending on basic intelligence and amount of hearing of hard of hearing children.

Credit be given to both deaf and hard of hearing children for lip reading in the grade schools. Where speech courses are necessary credit should also be given for speech work.

7. *Preschool Children.* Thorough psychological study of the deaf and hard of hearing child of preschool age.

Wider use of visiting teacher to assist in parental education.

Establishment of a nursery school for deaf children where research can be carried on.

The training of congenitally deaf children should be begun at as early an age as possible to secure flexible speech and take advantage of the natural efforts of every child to produce speech.

8. *Personality Problems.* Measure of personality and character traits and emotion factors among the deaf and hard of hearing, both adults and children.

Psychological research on emotional difficulties likely to arise in the lives of the deaf and the hard of hearing.

Study made of social maladjustment of the deaf and the hard of hearing with the view of effectively solving the problems presented.

Study made of number of children who are classed as mentally deficient who in reality have only defective hearing.

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9. *Vocational Problems.* Thorough study of all occupations with the view of finding those most suitable for the deaf and hard of hearing in order that training in school may be directed toward such occupations.

A study of vocations now taught in schools for the deaf as to variety, adaptability, and efficiency.

More adequate provision for placement and follow-up.

10. *Costs of Education.* Investigation of cost of annual scientific hearing tests compared with cost of education when hearing defects are not discovered.

Study made of hard of hearing children who repeat grades.

11. *Teacher Training.* Consideration given to the feasibility of establishing a national training school for teachers of the deaf and the hard of hearing at some university—with ample facilities for research and adequate training schools.

Establishment of more normal training courses for trained teachers who wish to become teachers of the deaf and hard of hearing; these training courses to be thorough and practical as well as theoretical.

12. *Medical.* Medical provision should go hand in hand with educational provision especially in certain types of deafness.

Deafness to be made a reportable disease in order that: Steps may be taken for correction when possible.

Immediate steps may be taken toward the child's special education in cases of serious loss of hearing or where deafness is progressive.

Vision to be conserved as well as hearing.

13. *Prevention.* More concerted effort should be made to impress upon the medical profession and to acquaint the general public with the grave after effects of many diseases of childhood which result in serious and progressive loss of hearing.

Society should be informed of the large number of congenitally deaf children whose parents are cousins.

14. *Blind-deaf*. The establishment in the United States of a special educational center for the blind-deaf. This need not necessarily be a school. New cases could be sent to it for observation, classification and elemental training and later returned to their home states for admission to schools for the deaf or blind or both. Special cases might have to be provided for in this center.

15. *Deaf-feeble-minded*. These should be segregated in schools for the feeble-minded and provided with teachers skilled in teaching the deaf as well as the feeble-minded.

APPENDIX

Locations of 4-A or phono-audiometers

The following is a partial list of locations of 4-A or phono-audiometers as far as they are known to the American Federation of Organizations of the Hard of Hearing and is given here as it is indicative of the proper attitude of school officials toward the detection of hearing impairment which is so apt to slow up the educational process:

Arizona

Phoenix

Arkansas

Trinity Hospital Little Rock, and Pulaski County Health Unit

California

Berkeley, Kern County, Los Angeles County, Los Angeles City, Marion County, San Diego, San Francisco, San Joaquin Local Health District, Santa Barbara, Stockton

Colorado

Denver

Connecticut

Hartford, New Haven, Waterbury, Westport

District of Columbia

Department of Interior

Georgia

Atlanta, Augusta, Savannah

Illinois

Chicago Board of Health, Cicero, Deersfield, Evanston, Highland Park, Winnetka

Indiana

East Chicago, Elwood, Evansville, Fort Wayne, Gary, Hammond, Kendellville, Muncie

Iowa

State College at Ames, Council Bluffs Clinic, Des Moines, Sioux City, University of Iowa at Iowa City

Kansas

Wichita

Louisiana

Truro Hospital, New Orleans

Maine

Augusta State Board of Health, Maine Public Health Association
at Augusta, Speech Readers Club of Portland, Portland

Maryland

Baltimore, Johns Hopkins University at Baltimore, Montgomery
County

Massachusetts

Belmont, Beverly, Boston, Brookline, Cambridge, Chelsea, Evans
Memorial at Boston, Fall River, Lynn, Melrose, Milton, Massa-
chusetts Eye and Ear Infirmary at Boston, Newton, Northampton,
Norwood, Plymouth County Health Association, Somerville,
Springfield, Speech Readers Guild of Boston, Waltham (jointly:
Wellesley, Franklin, Needham and Walpole), West Springfield,
Whitinsville, Worcester

Michigan

University of Michigan at Ann Arbor, Battle Creek Sanatorium,
Detroit, Lansing, Ypsilanti

Minnesota

Hibbing, Minneapolis, Naswauk, University of Minnesota

Mississippi

Jackson, Laurel

Missouri

St. Louis, Webster Groves

Nebraska

Omaha, University of Nebraska

New Hampshire

Concord, State Board of Public Welfare

New Jersey

Bloomfield, Camden, Englewood, Newark, Paterson, New Jersey
School for the Deaf at Trenton, Springfield

New York

Albany, Beacon, Brooklyn, Canandaigua, Gloversville, Hastings-
on-Hudson, Long Beach, Mt. Vernon, Niagara Falls, New
Rochelle, New York City High School Divisions, New York City
League for the Hard of Hearing, New York State Department
of Education, Ossining, Pelham, Port Washington, Rochester,
Schenectady, Syracuse, Utica, White Plains

North Carolina

Winston-Salem

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North Dakota

Fargo

Ohio

Akron, Ohio University at Athens, Cleveland, Cleveland Heights, Cincinnati, Ohio State University at Columbus, Columbus League for the Hard of Hearing (2), Coshocton, Miami University at Oxford, Springfield

Oregon

Portland

Pennsylvania

Erie, Bucknell University at Lewisburg, Philadelphia

Rhode Island

Providence

South Carolina

Charleston, Winthrop College at Rock Hill

Tennessee

George Peabody College at Nashville, Memphis, Shelby County Schools

Texas

University of Texas at Austin, Beaumont, Fort Worth, Houston, San Antonio

Utah

Logan, Provo, Salt Lake City

Virginia

Norfolk, Richmond

Washington

Spokane

West Virginia

Fairmont State Normal School

Wisconsin

Shorewood High School at Milwaukee, Bay Ridge Milwaukee, Oconomowoc, Watertown, Whitefish Bay

Territory of Hawaii

Board of Education at Honolulu (7 for use throughout the Islands)

Location of Public Residential Schools

The 64 public residential schools for the deaf are located as follows. Numbers in parentheses indicate number of schools in city:

Alabama		Maryland	
Talladega	(1)	Frederick	(1)
Arizona		Overlea (Baltimore)	(1)
Tucson	(1)	Massachusetts	
Arkansas		Beverly	(1)
Little Rock	(1)	Northampton	(1)
California		Randolph	(1)
Berkeley	(1)	Michigan	
Colorado		Flint	(1)
Colorado Springs	(1)	Minnesota	
Connecticut		Faribault	(1)
West Hartford	(1)	Mississippi	
Mystic	(1)	Jackson	(1)
District of Columbia		Missouri	
Washington	(2)	Fulton	(1)
Florida		Montana	
St. Augustine	(1)	Boulder	(1)
Georgia		Nebraska	
Cave Spring	(1)	Omaha	(1)
Idaho		New Jersey	
Gooding	(1)	Trenton	(1)
Illinois		New Mexico	
Jacksonville	(1)	Santa Fé	(1)
Indiana		New York	
Indianapolis	(1)	New York City	(3)
Iowa		Buffalo	(1)
Council Bluffs	(1)	Rome	(1)
Kansas		Rochester	(1)
Olathe	(1)	Malone	(1)
Kentucky		North Carolina	
Danville	(1)	Morganton	(1)
Louisiana		Raleigh	(1)
Baton Rouge	(1)	North Dakota	
Maine		Devils Lake	(1)
Portland	(1)		

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Ohio		Tennessee	
Columbus	(1)	Knoxville	(1)
Oklahoma		Texas	
Sulphur	(1)	Austin	(2)
Taft	(1)	Utah	
Oregon		Ogden	(1)
Salem	(1)	Vermont	
Pennsylvania		Brattleboro	(1)
Mt. Airy	(1)	Virginia	
Edgewood at Pittsburgh	(1)	Staunton	(1)
Scranton	(1)	Newport News	(1)
Philadelphia	(1)	Washington	
Rhode Island		Vancouver	(1)
Providence	(1)	West Virginia	
South Carolina		Romney	(1)
Cedar Spring	(1)	Institute	(1)
South Dakota		Wisconsin	
Sioux Falls	(1)	Delavan	(1)

Location of Public Day Schools

The 114 public day schools for the deaf are located as follows:

Alabama

Birmingham

California

Eureka, Fresno, Long Beach, Los Angeles, Oakland, Pasadena,
Pomona, Sacramento, San Diego, San Francisco

Colorado

Denver

Illinois

Chicago (10), Moline, Rockford

Iowa

Davenport, Des Moines, Dubuque, Ottumwa, Sioux City

Kansas

Kansas City, Topeka, Wichita

Kentucky

Louisville

Louisiana

New Orleans

Maryland

Baltimore

Massachusetts

Lynn, Roxbury, Springfield, Worcester

Michigan

Bay City, Detroit, Grand Rapids, Ironwood, Jackson, Kalamazoo,
Lansing, Saginaw, Traverse City, Ypsilanti

Minnesota

Duluth, Minneapolis, Rochester, St. Paul

Missouri

Kansas City, St. Louis

Nebraska

Lincoln, North Platte

New Jersey

Bayonne, Jersey City, Newark, Paterson

New York

Albany, Gloversville, New York, Schenectady

Ohio

Akron, Canton, Cincinnati, Cleveland, Columbus, Dayton, Findlay, Hamilton, Lima, Mansfield, Oak Harbor, Springfield, Toledo, Warren, Youngstown

Oklahoma

Tulsa

Oregon

Portland

Pennsylvania

Philadelphia (2), Erie

Texas

Fort Worth, Houston

Virginia

Norfolk, Richmond

Washington

Everett, Seattle, Spokane, Tacoma

West Virginia

Huntington

Wisconsin

Antigo, Appleton, Eau Claire, Fond du Lac, Green Bay, Kaukauna, Kenosha, La Crosse, Madison, Manitowoc, Marinette, Milwaukee, New London, Oshkosh, Racine, Rice Lake, Sheboygan, Stevens Point, Superior, Wausau

Location of Denominational and Private Schools

The 18 denominational and private schools are located as follows:

California	Missouri
Oakland	St. Louis (2)
Georgia	New York
Vineville	New York City
Illinois	Ohio
Chicago (2)	Cincinnati
Louisiana	Oklahoma
Chinchuba	Sand Springs
Maryland	Pennsylvania
Kensington, Irvington	Pittsburgh, Philadelphia,
Michigan	Lansdowne
Detroit	Wisconsin
Minnesota	St. Francis
Faribault	

State Laws Regarding the Compulsory Education of Deaf Children

The following brief summary was compiled by the United States Bureau of Education in June, 1928:

In Arizona :

Blind, deaf and dumb children must be enumerated annually, and the "State Board of Education shall enter into contract" with proper institutions for the education of the blind.

In California, Colorado, Connecticut, Maine, Maryland, Ohio, Pennsylvania, Washington, Wisconsin:

No educationally exceptional child shall be deprived of school privileges except with the express approval of the Secretary of the State Board of Education and every child so excluded shall be brought immediately to the attention of proper authorities to insure adequate protection and training for the child.

In Florida, Indiana, Iowa, Kansas, Kentucky, Michigan, Missouri, Nebraska, North Carolina, North Dakota, Oklahoma, Rhode Island, Texas:

State must provide for their education.

In Illinois, Minnesota, Oregon, South Dakota, Utah, Vermont, West Virginia :

Census of blind and deaf children must be taken and reported to the state superintendent.

In Louisiana : Attendance compulsory for

. . . mentally, morally, or physically deficient children in special classes or schools organized and maintained by the parish school boards for their benefit.

In Massachusetts :

No physical or mental condition capable of correction, or rendering the child a fit subject for special instruction at public charge, shall avail as a defense for failure to attend school.

In Missouri :

All "educable children" must be enumerated.

In Mississippi :

Compulsory where special classes are provided for them.

In California, Connecticut, Kentucky, Montana, Nevada, Pennsylvania, Vermont :

County and State School officials are required to make provisions, at the expense of the county and state for the education of any such child when upon application for such, it is shown that the parent or guardian is unable to pay for the education of said child.

In Colorado, New Jersey, South Dakota :

In any district where there are five or more blind, or ten or more deaf, or ten or more crippled, or ten or more three years or more below normal, who are not cared for in an institution, the board of education thereof shall establish a special class or classes for their instruction.

In Illinois, Indiana, Maine, Maryland, Michigan, New York, North Carolina, Ohio, Oregon, Rhode Island, Utah, Wisconsin :

Where there are ten or more children who are deaf, blind, crippled or otherwise physically defective, the district board of education shall establish special classes necessary to provide suitable instruction for such children.

In Iowa :

Where there are any physically or mentally handicapped children, the local school board must provide special classes for such children; compulsory attendance of mute or feeble-minded children is implied (not expressly stated).

In Minnesota, Nebraska, South Carolina :

All deaf mutes and blind of the state who are of proper age and mental capacity . . . shall be admitted to the benefits of the State Institute for such persons.

In Virginia :

The quinquennial school census must include a separate census of deaf and blind persons between seven and twenty-one, which shall be sent to the superintendent of schools for the deaf and blind.¹

In Wyoming :

The State must provide for the education of such (deaf) children.

It will be seen from this report that Alabama, Delaware, District of Columbia, Georgia, New Hampshire and Tennessee had no compulsory legislation affecting deaf children.

Location of Schools Giving Periodic Lessons in Lip Reading and Numbers of Children Receiving Instruction

The following list was compiled by the American Federation of Organizations for the Hard of Hearing in January 1931. It contains the names of cities in the schools of which periodic lessons in lip reading are given to hard of hearing children. The number does not include any hard of hearing children being educated with the deaf, and varies from month to month. It is unfortunate that figures have not been received from some cities where the Federation has been told such lip reading instruction is given, yet it has seemed best to include the name.

¹ "The General Assembly of Virginia of 1930 amended the state compulsory attendance law to apply to all children who are deaf and between the ages of six and eighteen years requiring schooling for a period of eight months each year unless the instruction of each child is considered impracticable on account of his physical or mental condition."

California		Michigan	
Los Angeles	275	Detroit	250 ¹
San Francisco	265	Flint	32
Santa Barbara	1	Grand Rapids	21
San Diego	10	Jackson	—
Long Beach	—	Minnesota	
Colorado		Minneapolis	—
Denver	9	St. Cloud	8
District of Columbia		St. Paul	8
Washington	87	Missouri	
Illinois		Kansas City	—
Chicago	172	St. Louis	27
Indiana		Nebraska	
East Chicago	} 31	Omaha	201
Indiana Harbor		New Jersey	
Gary	52	Jersey City	9
Iowa		Paterson	8
Des Moines	46	New York	
Sioux City	—	Albany	10
Kansas		Brooklyn	—
Kansas City	12	Buffalo	—
Topeka	—	New York City	—
Wichita	54	Rochester	325
Louisiana		Schenectady	—
New Orleans	55	Syracuse	17
Maryland		White Plains	25
Baltimore	176	Ohio	
Massachusetts		Akron	27
Boston	264	Cincinnati	13
Cambridge	67	Cleveland	180
Chelsea	60	Columbus	—
Fall River	157	Sandusky	11
Lynn	70	Toledo	49
Newton	75	Pennsylvania	
Reading	—	Erie	1
Somerville	75	Philadelphia	—
Springfield	82	Rhode Island	
West Springfield	—	Smithfield	—
Worcester	26		

¹ 1929-30.

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South Carolina		Fond du Lac	—
Charleston	82	Green Bay	8
Tennessee		Kaukauna	1
Memphis	300 ¹	Kenosha	8
Texas		La Crosse	5
Houston	—	Madison	—
San Antonio	—	Marinetta	6
Utah		New London	6
Salt Lake City	21	Racine	5
Virginia		Rice Lake	—
Norfolk	—	Stevens Point	1
Washington		Superior	—
Seattle	—	Wyoming	
Wisconsin		Casper	7 ²
Appleton	3	Cheyenne	40 ²
Antigo	1	Rock Springs	4 ²
Eau Claire	6	Sheridan	26 ²

¹ In giving this figure it is doubted whether the informant correctly understood the question.

² Approximate.

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¹ See page 317.

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DEFECTIVE IN SPEECH

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THE DEFECTIVE IN SPEECH

INTRODUCTION

AN attempt has been made to gather information about the training of children defective in speech in the school systems of the United States, and approximate answers are given to the following questions:

What is the extent of the problem? How many children with defective speech are there, and how many may be expected in any representative group?

What types of disorder may these children be expected to have, and in what proportion do the different disorders occur?

What is being done for these children?

How much does this work cost?

What should be done about the children defective in speech?

The work on this study consisted of three parts. In the first part elaborate questionnaires were sent to the boards of education of all cities of the United States having a population of 10,000 or more. This limitation was decided upon as it was considered unlikely that special training for speech correction would be undertaken in the smaller towns and rural districts, and they would therefore have no basis for answering the questions. The replies received from towns stating that they employed, or authorized, teachers to undertake speech correction work, are listed in Table 1.

The second part consisted in a survey of the city of Madison, Wisconsin, by the Committee itself. This was undertaken partly as a check upon the results of the questionnaire survey, which are inevitably somewhat inaccurate, and

TABLE 1
CITIES EMPLOYING OR AUTHORIZING TEACHERS FOR SPEECH CORRECTION WORK, NUMBER OF PUPILS, AND COST

	No. of teachers	No. of pupils per year	Cost per year	Average cost per pupil
Appleton, Wis.....	1	140	\$2,010	\$14 35
Baltimore, Md.....	9	2,000	18,000	3 00
Bayonne, N. J.....	4	1,500	8,030	5 35
Beaver Dam, Wis.....	1	180	1,800	10 00
Beloit, Wis.....	1	250		
Boston	17	2,725		
Buffalo, N. Y.....	8	3,000	20,525	6 84
Chicago.....	20	1,000	48,000	48 00
Cleveland, Ohio.....	9	2,656	24,235	9 12
Denver, Colo.....	2 5	905	6,480	7.11
Detroit, Mich.....	35	5,733	92,500	16 12
Eau Claire, Wis.....	1	250	1,345	5 38
Erie, Pa.....	1	150		
Fresno, Cal.....	1	400	2,300	5 60
Green Bay, Wis.....	2	400	3,650	9 12
Houston, Texas.....	1	248	1,700	6 85
Jackson, Mich.....	1	275	1,825	6 63
Janesville, Wis.....	1	165	2,100	12 71
Jersey City, N. J.....	5	750	15,448	20 59
Kalamazoo, Mich.....	2	87	3,510	40 34
Kenosha, Wis.....	2	400	3,731	9 33
La Crosse, Wis.....	1	158	1,904	12 05
Long Beach, Cal.....	1	230	2,763	12 01
Los Angeles, Cal.....	18	2,361	43,651	18 48
Manitowoc, Wis.....	1	225	1,716	7 62
Mankato, Minn.....	1	150	1,600	10 66
Marinette, Wis.....	1	200	1,408	7 04
Milwaukee, Wis.....	4	725	7,721	10 65
Minneapolis, Minn.....	11	4,000	19,216	4 80
Montclair, N. J.....	1	292		
Newark, N. J.....	11 5	2,340	30,742	13 14
New Orleans, La.....	5 5	3,000	11,374	3 79
New York City.....	27	14,659	113,864	7 76
Oshkosh, Wis.....	2	400	3,574	8 93
Pasadena, Cal.....	2	220	4,900	22 27
Passaic, N. J.....	1	198	3,510	17 73
Paterson, N. J.....	3	300	10,250	34 17
Philadelphia.....	54	12,000	103,647	8 64
Providence, R. I.....	3	1,400	6,900	4 93
Racine, Wis.....	2	550	3,966	7 21
Reading, Pa.....	5	1,500	11,650	7 76
Richmond, Cal.....	5	325	1,500	4 61
St. Louis, Mo.....	6	900	9,474	10 52
San Francisco.....	12	3,272	14,438	4 41
Seattle, Wash.....	11	4,000	19,216	4 80
Sheboygan, Wis.....	2	309	4,000	12 94
Washington, D. C.....	1	248	1,700	6 85
York, Pa.....	2	600	3,825	6.37
Totals.....	212	70,368	\$676,707	\$11.69

partly as supplementary, in that the Committee was able to make close distinctions between cases.

The third major task was to digest and interpret the several surveys already in the literature of the field of speech correction. These surveys were made from various points of view, and for various purposes, hence their combined implications were difficult to interpret. These previous surveys, however, furnished an interesting check upon the work of the present Committee and in many instances were reflected in the conclusions, which are always conservative.

Most of the inaccuracies that must be allowed for in a work of this kind are in the direction of conservatism. Conclusions drawn from these statistics are also conservative. For instance, from the statistics given, the conclusion that there are one million children in the United States with defective speech is obviously a conservative estimate, as the percentage shows a larger number on every estimate. But the figures are conservative for three reasons: (1) they are based on children who have been subjected to speech correction work; (2) in many cases work is done only in selected schools which it is presumed are in the wealthier districts; and (3) because any chance for error is likely to be in the direction of conservatism. The natural error would not be to count a normal child as defective, but would rather be to overlook a number of children really defective in speech.

TYPES OF SPEECH DEFECTS

The types that were considered for this study are here listed and defined as in the questionnaire survey:

Stuttering (sometimes called stammering). A disturbance in the rhythm of speech, an intermittent blocking, from which, if the conversational situation is favorable, the child may at times be quite free. This blocking may be in the muscles of the face, lips, tongue, or jaw; in the throat or larynx; in the respiratory muscles; or it may be a mere hesitation in the initiation of sounds or their repetition when initiated.

Articulatory defects, which may render the child's speech indistinct or confusing, because of his failure to use the commonly accepted speech sounds. This includes lisping, lalling, cluttering, and nasal speech.

When this failure is due chiefly to malformations of parts of the speech apparatus, such as teeth, tongue, palate and nasal passages, classify the case as one having articulatory difficulties due to "structural" anomalies.

When this failure is due to sluggishness of muscle response, for which disease of or injury to some nerve center is responsible, classify the case as "paralytic."

If the articulatory disorder is not due chiefly to a discoverable structural or physiological cause, classify it as "functional"; of which there are two types: (1) "oral inactivity" or speech clumsiness and (2) "sound substitution," the substitution of one sound for another.

A fourth, but pseudo-articulatory defect is that growing out of the imitation of provincial or foreign language models. Unlike a, b, and c, this defect is distinctly a problem of English pronunciation, and is therefore called "dialectal."

Disorders of voice are those failures to produce smooth, even, vibrant vocal tones of sufficient audibility to meet the most strenuous conversational needs—huskiness, shrillness, stridor, weakness, and so forth.

"Structural," those that are due to malformation of the throat and larynx.

"Paralytic," those that are due to the disease of or injury to some nerve or nerve-supplying muscles used in phonation.

"Functional," those that have no apparent organic or physiological cause.

Aphasias (including alevias and agraphias). Any failure of the child to make instant association between and among the following:

The hearing of a speech sound, the meaning of which he has learned.

The graphic symbol of the same sound.

The articulation of the same sound.

The writing of the same sound.

Such children may show their aphasia by an otherwise unexplainable slowness of learning language in its various forms (delayed speech).

Speech of the hard of hearing may often show:

Lack of inflection and control as to pitch and volume.

Inaccuracy of consonant sounds, especially of those that the child cannot readily say as his parents, teachers, and playmates say them, such as k, g, ch, r.

SUMMARY OF FINDINGS

There are in America 1,000,000 school children between the ages of five and eighteen so defective in speech as to require remedial treatment and training. This number does not include those who stopped their schooling before reaching eighteen years.

In any group the number of children listed as defective in speech will depend to some extent upon the investigator. Where one observer demands that the speech be impossible to understand before he calls it a speech defect, another lists the slightest deviation from the normal. This is especially true of oral inactivity, foreign accent, and sound substitution. The variety of responses in Table 2 undoubtedly is partly due to this cause.

Another factor which influences the number of cases of defective speech listed is the age of the children. Many children who in the first grade do not have good speech,

develop acceptable speech in the later grades as a result of imitation of teachers and other children, developmental factors, or work done by the regular teachers in correcting poor speech. There are also many who because of low intelligence, injuries, diseases or inherited factors, have poor speech and therefore drop out of school before reaching the later grades. In some of the cities interrogated, speech-correction work is confined to the upper grades and high schools. These staffs have no basis for estimating the number of speech defectives in lower grades.

Another factor influencing the number of defectives found in a school system is the amount of corrective work that has been done and the effectiveness of that work. In a school system that has had speech-correction work for some time, Madison for example, we would expect, all other things being equal, to find a smaller percentage of children defective in speech than in a city that has had no speech correction.

Just how much influence climatic conditions, standards of living and a general health program have on the percentage of defectives it is impossible to say; certainly they have some weight.

Table 2 is the list of 48 cities that replied to the questionnaire with sufficient accuracy to allow us to find the percentage of children with defective speech in the total enrolment. Most of these cities have had speech correction work for varying lengths of time.

The figures, it is obvious, are susceptible to several different interpretations. According to the Biennial Survey of Education 1926-1928 published by the United States Department of the Interior in 1930, there are 23,557,872 children in the elementary grades and high schools in the United States. If the largest percentage given in response to the questionnaire (Fresno, California), 21.4 per cent, is the correct one, there are in the United States 5,041,344 children with defective speech. If the smallest estimate given (Philadelphia, Pennsylvania), 1.0 per cent, is correct there are 235,578 speech defectives in the school systems. If the per-

TABLE 2

PERCENTAGE OF CHILDREN WITH DEFECTIVE SPEECH IN TOTAL
SCHOOL ENROLMENT OF FORTY-EIGHT CITIES

	School population	Speech defectives	Per cent
Appleton, Wis.....	9,867	200	2.0
Baltimore, Md.....	109,431	5,000	4.5
Bayonne, N. J.....	15,993	2,000	12.5
Beaver Dam, Wis.....	1,462	230	15.7
Beloit, Wis.....	5,200	450	8.6
Binghamton, N. Y.....	14,124	400	2.8
Boston.....	165,975	13,269	8.0
Buffalo, N. Y.....	85,822	3,355	3.9
Chicago.....	489,216	8,000	1.6
Cleveland, Ohio.....	148,247	3,000	2.0
Columbus, Ohio.....	26,422	1,266	4.8
Denver, Colo.....	78,605	905	1.1
Detroit, Mich.....	246,426	1,200	0.5
Eau Claire, Wis.	5,000	222	4.4
Fresno, Cal.....	13,989	3,000	21.4
Green Bay, Wis.....	5,376	370	6.9
Houston, Texas.....	58,675	700	1.2
Jackson, Mich.....	10,119	600	5.9
Janesville, Wis.....	3,670	300	8.2
Jersey City, N. J.....	71,984	5,000	6.9
Kenosha, Wis.....	9,683	1,048	10.8
La Crosse, Wis.....	5,540	316	5.7
Long Beach, Cal.....	24,025	1,200	5.0
Los Angeles, Cal.....	213,603	4,480	2.1
Mankato, Minn.....	2,309	150	6.5
Manitowoc, Wis.....	3,525	250	7.1
Marinette, Wis.....	1,723	173	10.0
Milwaukee, Wis.....	79,497	1,361	1.8
Minneapolis, Minn.....	81,774	6,000	7.3
Montclair, N. J.....	6,679	300	4.5
Newark, N. J.....	86,040	10,000	11.6
New Orleans, La.....	39,334	8,000	20.1
New York City.....	1,030,840	50,000	4.8
Oshkosh, Wis.....	5,864	500	8.5
Okmulgee, Okla.....	6,064	374	7.0
Pasadena, Cal.....	20,000	270	1.3
Passaic, N. J.....	12,415	147	1.2
Philadelphia.....	261,909	2,600	1.0
Providence, R. I.....	41,308	2,000	4.8
Racine, Wis.....	12,768	1,000	7.8
Reading, Pa.....	21,513	2,945	13.5
Richmond, Cal.....	5,345	500	9.4
San Francisco.....	83,324	2,821	3.4
Schenectady, N. Y.....	18,376	1,470	8.0
Seattle, Wash.....	63,510	1,200	1.9
Sheboygan, Wis.....	4,449	618	11.4
St. Louis, Mo.....	109,484	8,000	7.3
York, Pa.....	5,901	600	10.2

centage is found by adding together all estimates of defectives and dividing the total school population in these cities by this figure the result is 5 per cent. This would mean that there are 1,177,893 children with defective speech. The median percentage is 6.9 per cent, giving an estimate of 1,625,493 defectives. The median was obtained by placing the 48 cities in order from the largest percentage given to the smallest. Numbers 24 and 25 were Green Bay and Jersey City with 6.9 per cent. The average of the percentages is also 6.9, again giving an estimate of 1,625,493.

Most of these cities have speech-correction work and many of them have had it for several years. The influence of this work in reducing the number of cases of defective speech in later school years is partly responsible for the rapid decrease in the number of cases, grade by grade, as revealed by Tables 3, 5, 6, 7, 8, 9, 10, and 11. Cases of stuttering (Table 4) show an increase.

But it is obvious that we are not entirely justified in taking the percentage of defectives from these cities and saying that the country as a whole has the same percentage, even assuming that the reports from these cities are entirely reliable and accurate. We have no way of knowing how the proportion of defectives in small towns and country schools compares with that in the cities studied, most of which are large. We assume that the percentage in these cities is smaller than it would be if no speech correction work had been done.

In the survey of the city of Madison 10,033 children were considered and 710 were classified as defective. This is 7 per cent plus. In estimating the validity of this Madison survey two important considerations should be borne in mind: In the first place, it was made for the purpose of obtaining information for the White House Conference and is not, therefore, influenced as much as other surveys have been by particular viewpoints. In the second place the classification was prepared finally by a committee of three specialists who were not only anxious to get at the truth but were a constant check one upon the other.



Courtesy of Minneapolis Public Schools

CLASS UNDER DIRECTION OF THE DEPARTMENT OF SPECIAL EDUCATION IN MINNEAPOLIS RECEIVING TRAINING IN TONGUE GYMNASTICS

We feel again that if any mistake in this survey was made it was upon the side of conservatism since the estimates were subjected to several checks. First of all a room was surveyed by the group of assistants composed of persons from the staffs of three Committee members. It is possible that the group made mistakes both in calling some children defective in speech who were not, and in dismissing as having satisfactory speech some who would be called defective by others. Those whose speech was not deemed defective never came before the Committee; there was no method of checking upon them. However, those who were called defective went before the three specialists and were classified, or dismissed as having satisfactory speech. Then, the list of children who were classified as defectives was submitted to the teacher of the grade and she was asked to strike from the list any whose speech difficulties had not caught her attention. In this way, only those whose speech was conspicuously defective were finally classified; there is a considerable possibility that a number of children with defective speech escaped classification.

It is considered that the Madison survey gives as fair and conservative an estimate of the percentage of defectives in the school system as it is possible to get. We must allow for error, however, in view of the fact that we are estimating urban population only, that these children have had speech training for a number of years and that we have a sample of only one section of the country. It is surprising, however, that the Madison estimate is within one-tenth of one per cent of the average percentage and the median percentage found on the questionnaire survey. If Madison is a fair sample of the nation there are 1,638,051 school children in the United States with defective speech.

In view of this evidence we have no hesitation in saying that there are 1,000,000 school children in America so defective in speech as to require remedial treatment.

TABLE

RAPID DECREASE, SHOWN GRADE BY GRADE, IN THE NUMBER OF CASES

	First		Second		Third		Fourth		Fifth	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
1. Appleton, Wis.	30	20	16	9	6	2	2	—	1	—
2. Baltimore, Md.	240	200	134	120	124	86	81	45	53	26
3. Bayonné, N. J.	3	—	1	—	6	2	1	1	3	2
4. Beaver Dam, Wis.	15	7	17	4	11	5	11	4	2	2
5. Beloit, Wis.	14	11	15	9	6	2	1	1	1	1
6. Binghamton, N. Y.	25	16	17	10	9	3	2	1	—	—
7. Boston.	—	—	4	1	—	—	2	—	1	1
8. Buffalo, N. Y.	198	153	121	47	44	20	34	15	17	11
9. Cleveland, Ohio.	252	163	171	123	105	64	82	29	31	35
10. Detroit, Mich.	244	148	289	171	235	136	183	116	120	67
11. Eau Claire, Wis.	21	12	7	5	1	2	4	1	1	—
12. Green Bay, Wis.	37	17	12	16	3	2	—	2	—	—
13. Houston, Texas.	58	24	11	6	19	6	—	2	4	1
14. Jackson, Mich.	95	83	57	38	36	27	21	6	12	11
15. Janesville, Wis.	27	18	18	5	1	1	2	1	1	1
16. Jersey City, N. J.	122	73	138	93	128	88	117	111	122	96
17. Kalamazoo, Mich.	4	4	4	4	—	—	1	1	—	—
18. Kenosha, Wis.	49	34	10	10	14	13	10	7	15	4
19. La Crosse, Wis.	10	10	14	15	13	8	3	4	—	—
20. Los Angeles, Cal.	293	104	181	88	138	49	87	37	62	18
21. Manitowoc, Wis.	22	8	9	6	5	2	2	1	4	2
22. Mankato, Minn.	20	11	7	9	3	6	3	2	—	—
23. Marinette, Wis.	24	18	8	6	4	—	1	1	—	—
24. Milwaukee, Wis.	86	50	50	16	14	10	9	5	7	4
25. Minneapolis, Minn.	495	363	294	226	208	148	118	71	69	51
26. Montclair, N. J.	38	9	13	11	9	3	3	2	1	2
27. New Orleans, La.	235	157	175	103	104	62	64	40	58	32
28. New York City.	—	—	—	—	—	—	—	—	—	—
29. Oshkosh, Wis.	85	56	28	12	1	6	10	5	5	3
30. Pasadena, Cal.	18	14	7	5	3	1	5	1	2	—
31. Passaic, N. J.	12	4	9	5	2	3	3	1	1	—
32. Philadelphia.	141	177	283	193	230	70	88	70	35	53
33. Providence, R. I.	26	9	17	9	25	15	25	13	29	12
34. Racine, Wis.	57	35	19	13	18	11	6	9	5	—
35. Reading, Pa.	477	288	275	163	177	76	70	53	63	35
36. Richmond, Cal.	20	19	13	3	9	1	10	7	8	3
37. St. Louis, Mo.	144	81	84	53	51	30	35	7	19	8
38. San Francisco.	100	52	104	80	111	64	111	53	94	51
39. Sheboygan, Wis.	11	10	7	3	11	4	3	2	1	1
40. York, Pa.	106	75	45	35	32	14	13	11	1	5
Totals.	3854	2533	2684	1725	1916	1042	1223	738	848	538

THE DEFECTIVE IN SPEECH

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OF SOUND SUBSTITUTION AS A RESULT OF SPEECH CORRECTION WORK

Sixth		Seventh		Eighth		Ninth and Tenth		Eleventh and Twelfth		Undis-tributed	Totals		
Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls		Boys	Girls	
2	1										57	32	1
40	24										672	501	2
											14	5	3
6	4										62	26	4
2	4										39	28	5
											53	30	6
2			1	2	1			1	1		12	5	7
7	6	5	1	2	2						428	255	8
16		2									659	414	9
91	51	49	23	23	14	22	24	6	2		1,262	752	10
1											35	20	11
											52	37	12
											92	39	13
14	7	1		3	3	2					241	175	14
1	2										50	28	15
97	91	63	47	44							831	599	16
1											10	9	17
3	3		1								101	72	18
1											41	37	19
50	14	16	13	22	3	22	17	4	8		875	351	20
3	2										45	21	21
						2	2				35	30	22
											37	26	23
4	6	1	5	1							172	96	24
45	41	11	5	3	8		1				1,243	914	25
5		2		4	1	2	2				75	30	26
30	14	24	10	6	7						696	425	27
										10,937			28
2	3	1	4	4	4						136	93	29
				2	2	1	1	1			39	24	30
2			3								29	16	31
70	35	36	14	14	14	14	14	14	14		925	654	32
17	6	5	4	5	4	3	1	1			153	73	33
3	3										108	71	34
43	26										1,105	641	35
3	1	2		1	1	2					68	35	36
20	11	14	10	10	10	3	3	1			381	213	37
71	44	45	34	44	32	9	8				689	418	38
											33	20	39
5	2										202	142	40
657	402	277	175	190	108	82	71	28	25		11,757	7357	

TABLE
CASES OF STUTTERING

	First		Second		Third		Fourth		Fifth	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
1. Appleton, Wis.....	1		3		1		3		1	
2. Baltimore, Md.....	20	10	18	8	22	9	17	1	17	7
3. Bayonne, N. J.....	10	1	24	5	26	8	25	9	41	9
4. Beaver Dam, Wis....	1		2	1	1		1	1		
5. Beloit, Wis.....			2	1			2	1		
6. Binghamton, N. Y...	8	6	8	2	9		1			
7. Boston.....	2		5	2	10	1	12	3	14	2
8. Buffalo, N. Y.....	49	12	59	15	42	15	46	14	44	19
9. Cleveland, Ohio.....	16	8	22	8	66	20	52	10	52	16
10. Detroit, Mich.....	81	19	98	23	131	37	126	34	111	25
11. Eau Claire, Wis.....	4	3	4	3	2	1	5	1	3	2
12. Green Bay, Wis.....	3	2	4	2	3	1	1		2	1
13. Houston, Texas.....	9	3	4	1	6	3	4	2	7	
14. Jackson, Mich.....	10		13	2	7	3	7	5	4	5
15. Janesville, Wis.....	2	2	2	2			2		3	
16. Jersey City, N. J....	12	10	21	4	23	6	47	10	54	20
17. Kalamazoo, Mich....	2		3	1	1				3	
18. Kenosha, Wis.....	3	3	4	1	9		6		2	1
19. La Crosse, Wis.....			2	2	2	2	3	1	1	
20. Los Angeles, Cal....	55	18	59	22	73	19	73	22	59	14
21. Manitowoc, Wis....	2	3	1	2		1	2			
22. Mankato, Minn.....	2				1				2	
23. Marinette, Wis.....	1		3		4	2	5	1	2	
24. Milwaukee, Wis.....	30	6	25	5	19	8	17	5	25	10
25. Minneapolis, Minn...	85	29	70	24	71	24	45	13	44	9
26. Montclair, N. J.....	6	1	7	2	15	2	10	1	11	1
27. Newark, N. J.....	51	14	53	13	65	7	57	16	73	22
28. New Orleans, La.....	22		24	7	35	5	43	15	52	5
29. New York City.....										
30. Oshkosh, Wis.....	5		2	1	8	3	1	2	3	
31. Pasadena, Cal.....	8	1	7	2	4	3	8		5	2
32. Passaic, N. J.....	2	1	7		10	2	11	3	8	2
33. Philadelphia.....	35	14	141	35	106	14	193	14	288	35
34. Providence, R. I.....	4	5	22	10	52	21	72	18	70	26
35. Racine, Wis.....	11	3	11	1	10	1	7	3	5	
36. Reading, Pa.....	12	4	17	5	18	7	12	4	14	2
37. Richmond, Cal.....	8	1	10	2	10	1	11	2	10	1
38. St. Louis, Mo.....	12	5	18	10	24	11	16	5	23	6
39. San Francisco.....	28	16	51	18	75	26	96	35	112	29
40. Seattle, Wash.....										
41. Sheboygan, Wis.....	5	1	5	1	4		6		3	
42. Washington, D.C.....										
43. York, Pa.....	6	2	8	1	2	1	7	2	4	
Totals.....	623	203	839	244	966	265	1052	253	1172	271

THE DEFECTIVE IN SPEECH

361

4

BY GRADES

Sixth		Seventh		Eighth		Ninth and Tenth		Eleventh and Twelfth		Undis-tributed	Totals		
Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls		Boys	Girls	
						1	1				10	1	1
12	2	30	10	10	5	8	5				154	57	2
32	2	42	6	23	5	7	5				230	50	3
											5	2	4
2											6	2	5
											26	8	6
10	2	8	1	8	2	6	4	5	1		80	18	7
36	11	38	6	23	7			14	4		351	103	8
72	18	26	26	26	18						332	124	9
115	29	70	24	62	15	47	17	10	4		851	227	10
2											20	10	11
1		1									15	6	12
4											34	9	13
6	3		1		1	4					51	20	14
1											10	4	15
77	13	40	12	39	12	9	2				322	89	16
											9	1	17
2	1							1			27	6	18
2		1		1	3	1					13	8	19
45	19	51	8	58	12	109	25	55	60		637	219	20
2											7	6	21
	2	1		2		1	1				8	4	22
2	1			1		2					20	4	23
18	7	14	5	10	3	1					159	49	24
49	20	5	1	3	1	3					375	121	25
6	1	7	2	8	1	5	1	3	2		78	14	26
74	18	65	13	68	12	12	12	10	1		528	128	27
33	14	63	13	14	9						286	68	28
										3747			29
2	5	6		4	4						31	15	30
3	9					19		2			56	17	31
9		7	1	8	2						62	11	32
258	14	159	14	141	35	159	35	159	14		1639	224	33
96	18	88	13	80	11	53	18	7	8		544	148	34
1	2	3	2	2	1						50	13	35
17	3										90	25	36
5	4	11		4		10		5			84	11	37
14	5	21	4	14	3						142	49	38
82	30	84	16	68	14	134	40	61	17		791	241	39
										160			40
1	1	1		1	1			1	1		27	5	41
										209			42
4	1										31	7	43
1095	255	842	178	678	177	591	166	333	112		8191	2124	

TABLE

RAPID DECREASE, GRADE BY GRADE, OF NUMBER OF CASES OF STRUCTURAL

	First		Second		Third		Fourth		Fifth	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
1. Appleton, Wis.			2		1			1		
2. Baltimore, Md.	51	23	30	13						
3. Bayonne, N. J.	57	48	144	84	162	81	91	57	69	35
4. Beaver Dam, Wis.			1		4		3	1	1	1
5. Beloit, Wis.	1	1	5	3	1	3	1	1	1	
6. Binghamton, N. Y.	4	3	4	1	4	1	1			
7. Boston.							3		2	1
8. Buffalo, N. Y.	90	68	73	43	53	48	41	36	28	17
9. Cleveland, Ohio.	26	16	16	4	36	4	14	12	8	4
10. Detroit, Mich.	19	18	21	17	29	11	22	22	19	8
11. Eau Claire, Wis.	13	29	10	4	3	4	4	3		2
12. Green Bay, Wis.	3	4	5	2	3	4				
13. Houston, Texas.	5	4	5	3	6	2	2	1	7	7
14. Jackson, Mich.	4	4	2	7	4			3	2	4
15. Janesville, Wis.	2	3	1	4	1	1		1		
16. Jersey City, N. J.	9	3	6	12	10	13	10	11	13	18
17. Kenosha, Wis.	4	3	3	3	2		1		2	
18. La Crosse, Wis.		3	2	2	4		1	1		
19. Los Angeles, Cal.	7	6	15	6	7	3	7		5	4
20. Manitowoc, Wis.	19	12	8	2	5	3	6		1	1
21. Mankato, Minn.										
22. Marinette, Wis.	3	1	2	3	2	2	1		1	
23. Milwaukee, Wis.	6	8	11	5	9	3	7	7	9	4
24. Minneapolis, Minn. .	107	78	57	60	45	48	37	33	25	20
25. Montclair, N. J.	1	3	2		1	2	3	3	3	1
26. New Orleans, La.	43	17	43	28	47	35	22	20	30	16
27. New York City.										
28. Oshkosh, Wis.	3	1	1	2	2	1	1	1	1	
29. Pasadena, Cal.	3	1	1	1	2	2	1		1	1
30. Passaic, N. J.			2			3	2	1	1	
31. Providence, R. I.	16	7	29	10	24	14	31	9	24	8
32. Racine, Wis.	15	9	13	6	6	7	4	2	5	3
33. Reading, Pa.	14	8	14	8	14	10	6	3	5	7
34. Richmond, Cal.	1	1	6		3	2	4		4	1
35. St. Louis, Mo.	2		3	2	2	1	5	2	3	3
36. San Francisco.	13	2	14	8	15	13	20	12	14	9
37. Sheboygan, Wis.	11	7	9	9	9	6	3	2		
38. Washington, D. C.										
39. York, Pa.	15	15	12	3	8	4	7	5	1	1
Totals.	567	406	572	355	524	331	361	250	285	176

THE DEFECTIVE IN SPEECH

36

5

ARTICULATORY DEFECTS AS A RESULT OF SPEECH CORRECTION WORK

Sixth		Seventh		Eighth		Ninth and Tenth		Eleventh and Twelfth		Undis-tributed	Totals	
Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls		Boys	Girls
											3	1
											81	36
65	16	40	24	42	10	28	15				698	370
2	1										11	3
											9	8
											13	5
1		1				2	1	1	1		10	3
25	11	12	7	8	6						330	236
4	2	2		12							118	42
8	15	5	7	6	7	1	7				130	112
1											31	42
											11	10
											25	17
				2							14	18
											4	9
10	14	6	12	4	6		1				68	90
											12	6
											7	6
2	1	2		2	2	3	4	2	4		52	30
3											42	18
							2		2			4
2											11	6
7	4	3	2	6	3						58	36
18	18	2	2								291	259
								1			11	9
21	29	12	6	2	2						220	153
		1								815		
1				2	1	1	1				9	5
1	1										12	7
											6	5
22	9	14	7	5	2	11	1	2	1		178	68
2	1						1				45	29
4	6										57	42
1											19	4
2			1	2	1						19	10
15	9	6	8	5	3	3			1		105	65
				1							33	24
										162		
2	3										45	31
219	140	106	76	99	43	49	33	6	9		2788	1819

TABLE

RAPID DECREASE, SHOWN GRADE BY GRADE, OF NUMBER OF CASES

	First		Second		Third		Fourth		Fifth	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
1. Appleton, Wis.....	1	1								
2. Baltimore, Md.....	40	16	4		18	9				
3. Beaver Dam, Wis....	5	1	1	2	1					
4. Beloit, Wis.....	1		2	1	1		2			
5. Binghamton, N. Y.	15	8	9	3	8	4				
6. Boston.....	2		2	1	2	1	3	1	2	
7. Buffalo, N. Y.....	244	153	127	77	80	53	59	31	32	17
8. Cleveland, Ohio.....	18	35	35	18	54	9	17		18	
9. Detroit, Mich.	108	41	115	39	78	26	62	35	36	21
10. Eau Claire, Wis.....	12	2	5	1	2	2	4		3	1
11. Green Bay, Wis.....	18	15	4	12	1		6	1		
12. Houston, Texas.....	5	1			1		1		1	
13. Jackson, Mich.....	15	14	3	5	1	2	1	1		2
14. Janesville, Wis.....	1	1	7	1	7		1	1		
15. Jersey City, N. J. .	9	3	7	9	7	3	5	6	4	1
16. Kalamazoo, Mich....	5	2	1	3						1
17. Kenosha, Wis.....	29	15	14	4	12	4	8	3	7	2
18. La Crosse, Wis.....	1	1	10	1	3	3	5	1	5	1
19. Los Angeles, Cal.	4		2	1	3		1	1	2	
20. Manitowoc, Wis.				1			1	1		
21. Mankato, Minn.....	2	2	3	2	1					
22. Marinette, Wis.	6	3	3	2		1				
23. Milwaukee, Wis.....	38	20	39	17	34	19	17	8	21	8
24. Minneapolis, Minn...	58	15	25	9	16	8	7	6	9	1
25. Montclair, N. J.....	10	1	7		4	2	4	2	2	1
26. New Orleans, La.	76	26	75	54	80	63	70	51	48	44
27. Oshkosh, Wis.....	11	3	7	4	1		4	1	4	1
28. Pasadena, Cal.....	5	1	2	1	2			1		
29. Passaic, N. J.....			1		1		2	1	1	
30. Philadelphia.....	106	141	283	141	230	141	230	230	265	124
31. Providence, R. I.	8	5	11	1	6	1	6	2	6	3
32. Racine, Wis.....	15	3	10	5	4		1	1	1	
33. Reading, Pa.	47	30	41	25	24	13	14	9	7	16
34. Richmond, Cal.....	3		1		4	3	6	2	8	3
35. St. Louis, Mo.....	29	22	32	21	18	4	12	8	11	6
36. San Francisco.....	15	10	27	11	29	21	16	18	30	20
37. Sheboygan, Wis.....	28	12	13	4	5	1			2	
38. York, Pa.....	6	2	7	2	5		2	2	1	1
Totals.....	996	605	935	478	743	393	567	424	526	274

THE DEFECTIVE IN SPEECH

365

6

OF ORAL INACTIVITY AS A RESULT OF SPEECH CORRECTION WORK

Sixth		Seventh		Eighth		Ninth and Tenth		Eleventh and Twelfth		Undistributed	Totals	
Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls		Boys	Girls
1											2	1
											62	25
											7	3
4											10	1
											32	15
1	2	2				1					15	5
26	12	12	3	2	3						582	349
16											158	62
34	17	28	14	7	3	9	2	1			478	198
6	1										32	7
2											31	28
											8	1
											20	24
1											17	3
3	3	2		3	1						40	26
			1								6	7
	2	2	2								72	32
											24	7
1	1	1	2								14	5
											1	2
1	1										7	5
1											10	6
14	4	7	1	5	4						175	81
4	1	1	1								120	41
4		2	1	1	1	1					35	8
41	36	28	18	9	9						427	301
3	1	2									32	10
				1	1	1	1				11	5
1		1		1							8	1
124	106	106	88	88	70	53	88	14	35		1499	1164
5	2	3	1								45	15
1											32	9
4	9										137	102
11	1										33	9
11	1	9	1	2	2	1	4				125	69
21	11	22	6	9	5	6					175	102
											48	17
1											22	7
342	211	228	139	128	99	72	95	15	35		4552	2753

TABLE

RAPID DECREASE, SHOWN GRADE BY GRADE, IN CASES OF

	First		Second		Third		Fourth		Fifth	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
1. Appleton, Wis.				1						
2. Bayonne, N. J.	2		3	2	1		2	1		
3. Beaver Dam, Wis.	2		3	3	2	1	2		2	2
4. Beloit, Wis.				1	1			1		
5. Binghamton, N. Y. .	4	6	6	3	1	4				
6. Boston					3				1	
7. Buffalo, N. Y.	38	24	22	11	21	7	8	10	8	5
8. Cleveland, Ohio.	9	8	7	4	6	3	7	3	8	5
9. Detroit, Mich.	14	7	27	19	27	21	35	14	26	15
10. Eau Claire, Wis.		1			1	1	3		1	2
11. Green Bay, Wis.	9	7	3	5	1			2	2	
12. Houston, Texas.	2			2	1				1	1
13. Jackson, Mich.	4	5	2	2	3		1	1		
14. Janesville, Wis.	4	2		3						
15. Jersey City, N. J. .				1		1	1			
16. Kalamazoo, Mich. . .	1								1	
17. Kenosha, Wis.	4	4	3	1						
18. La Crosse, Wis.									1	
19. Los Angeles, Cal.	7	3	3	2	5	3	3	1	1	1
20. Manitowoc, Wis. . .	2	1	2		4	1	3	2	1	
21. Mankato, Minn.				1						
22. Marinette, Wis.	2	1	1	1	3		6	1	2	1
23. Milwaukee, Wis.	5		4	1	1		2	1	1	1
24. Minneapolis, Minn. .	56	27	28	10	18	7	3	2	6	1
25. Montclair, N. J.	4	1	0	1		1				1
26. Newark, N. J.	36	13	21	5	11	1	21	11	13	9
27. New Orleans, La.	23	30	40	10	13	12	13	12	15	6
28. New York City										
29. Oshkosh, Wis.	7	5	1				1		1	
30. Pasadena, Cal.	3									
31. Passaic, N. J.	1		0	1						
32. Philadelphia.	53	141	124	35	88	14	141	53	177	14
33. Providence, R. I. . .	2	4	10	2	3	1	3	3	6	2
34. Racine, Wis.	22	10	12	4	8	2	5	1	3	
35. Reading, Pa.	95	83	65	30	41	36	38	32	18	19
36. Richmond, Cal.	6		5	2	4	3			3	2
37. St. Louis, Mo.	6	5	9	3	5	2	2	1	5	3
38. San Francisco.	4	2	10	4	13	6	9	4	10	4
39. Sheboygan, Wis.	5		2	1	3	1	1	1		
40. Washington, D. C. . .										
Totals.	432	390	413	171	288	128	310	157	313	94

DIALECTAL DEFECTS AS A RESULT OF SPEECH CORRECTION WORK

Sixth		Seventh		Eighth		Ninth and Tenth		Eleventh and Twelfth		Undis-tributed	Totals		
Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls		Boys	Girls	
												1	1
3		2	2								13	5	2
1	1										12	7	3
											1	2	4
											11	13	5
				1							5		6
7	1	3	2	1	1						108	61	7
5	4										42	27	8
22	28	8	9	6	6	17	16	5	4		187	139	9
											5	4	10
		3	1								18	15	11
											4	3	12
1											11	8	13
	1										4	6	14
1											2	2	15
2											4		16
											7	5	17
											1		18
5	3	1	2	2	1	3	1		1		30	18	19
4											16	4	20
												1	21
1											15	4	22
			1								13	4	23
9	2	5	1	1							126	50	24
1						1					6	4	25
6	3	5	1	3		3		2			121	43	26
8	7		1								112	78	27
										220			28
1											11	5	29
			1		1						3	2	30
											1	1	31
177	14	35	14	14	14	14	14	14	14		837	327	32
	1	2		1	1	1		1			29	14	33
3											53	17	34
30	28										287	228	35
2											20	7	36
4	2	2	2								33	18	37
13	7	15	5	7	7	5	4				86	43	38
											11	3	39
										54			40
306	102	81	42	36	31	44	35	22	19		2245	1169	

TABLE

RAPID DECREASE, SHOWN GRADE BY GRADE, IN CASES OF

	First		Second		Third		Fourth		Fifth	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
1. Bayonne, N. J.....			1	1	2		1			
2. Beaver Dam, Wis....			2	2			1	1		2
3. Beloit, Wis.....	0								1	
4. Boston.....					2		1		1	
5. Buffalo, N. Y.....	1	3	5		1	1	1			
6. Detroit, Mich.....	9	3	14	5	5	7	3	4	5	5
7. Eau Claire, Wis....	6	1	1						1	
8. Green Bay, Wis....					1					
9. Houston, Texas.....			1			1	1	2	1	
10. Jackson, Mich.....		2	2		2	1	2		1	
11. Janesville, Wis.....	1		1	1	2	1	8	1	5	2
12. Kenosha, Wis.....	1									
13. La Crosse, Wis.....			1		1					1
14. Los Angeles, Cal....	2		1			1				
15. Mankato, Minn.....	1			1						
16. Marinette, Wis.....			2		1	1	1	2	2	3
17. Milwaukee, Wis....			2							
18. Minneapolis, Minn..	6	3	8	2	4	3	1	1	1	3
19. Montclair, N. J....	1		1		1				1	
20. New Orleans, La....	14	7	17	32	30	31	23	11	30	21
21. New York City.....										
22. Pasadena, Cal.....	2									
23. Passaic, N. J.....					1					
24. Philadelphia.....	14	14	35	14	35	14	53	14	53	14
25. Providence, R. I....							1		1	1
26. Racine, Wis.....	1		1	1	1	1				
27. Reading, Pa.....	32	37	19	20	7	6	11	18	9	7
28. Richmond, Cal.....	6	2	5	2	3	5	3	5	4	1
29. St. Louis, Mo.....	2	1	1	3		2			1	
30. San Francisco.....			2		2		3	1	1	2
31. Sheboygan, Wis.....	2	1	1	3	2	2			1	
32. Washington, D. C....										
33. York, Pa.....	1				1		1			
Totals.....	102	74	123	87	104	77	115	60	119	62

FUNCTIONAL DEFECTS AS A RESULT OF SPEECH CORRECTION WORK

Sixth		Seventh		Eighth		Ninth and Tenth		Eleventh and Twelfth		Undis-tributed	Totals		
Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls		Boys	Girls	
				2							6	1	1
	2										3	7	2
3		4		2							1		3
2	1										13		4
											10	5	5
5		3	2			2	4	1			47	30	6
											8	1	7
											1		8
											3	3	9
2	1										9	4	10
											17	5	11
											1		12
						1		1			2	1	13
											5	1	14
				1							1	2	15
1		1									6	6	16
											4		17
	1			1							21	13	18
1								1			5	1	19
15	13	14	11	5	6						148	132	20
										228			21
											2		22
											1		23
35	14	14	14	35	14	14	14	14	14		302	140	24
3		1	1	1		1		1			9	2	25
2	2										5	4	26
6	3										84	91	27
2	3	2				2					27	18	28
12	2		2			1					17	10	29
1		3		1	1	2					15	4	30
1	2		2			1					8	10	31
										8			32
											3		33
91	44	42	32	47	22	24	19	17	14		784	491	

TABLE

RAPID DECREASE, SHOWN GRADE BY GRADE, IN CASES OF

	First		Second		Third		Fourth		Fifth	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
1. Appleton, Wis.....	1									
2. Bayonne, N. J.....							1			
3. Beaver Dam, Wis....		2	2	1	1	2	2		1	3
4. Beloit, Wis.....	1		1	1						
5. Boston.....					2		2	1	1	
6. Buffalo, N. Y.....	3	2	2	3	5	1	1	1	2	
7. Detroit, Mich.	1	3	1	1	6	3	3	5	5	
8. Eau Claire, Wis.....	1									
9. Green Bay, Wis.....				1						
10. Jackson, Mich.....									1	
11. Janesville, Wis.....			1							
12. Jersey City, N. J. . .			1							
13. Kenosha, Wis.	2			1		1				
14. Los Angeles, Cal.									1	1
15. Manitowoc, Wis.....	1				1					
16. Marinette, Wis.	1		1		3		3		2	
17. Minneapolis, Minn....	2	2	2		1	1	1		1	
18. Montclair, N. J.....			1		1		2	1	1	2
19. Newark, N. J.....	2						3	1	0	
20. New Orleans, La.....	11	9	9	4	15	14	14	15	10	6
21. New York City.....										
22. Oshkosh, Wis.....	4	1	1			1			1	1
23. Pasadena, Cal.....										
24. Providence, R. I....										
25. Racine, Wis.....										
26. Richmond, Cal.....				2	3		2		1	1
27. St. Louis, Mo.....	1		0	1		1			1	1
28. San Francisco.			1		1	1		1		
29. Sheboygan, Wis.....	2	1	5	2	3			1		
30. Washington, D. C....										
31. York, Pa.....								1	1	
Totals.....	33	20	28	17	42	25	31	29	30	15

THE DEFECTIVE IN SPEECH

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9

STRUCTURAL DEFECTS AS A RESULT OF SPEECH CORRECTION WORK

Sixth		Seventh		Eighth		Ninth and Tenth		Eleventh and Twelfth		Undis-tributed	Totals	
Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls		Boys	Girls
											1	1
			1								1	2
1	3										7	3
											2	4
1						2	2	1			9	5
		1			1						14	6
2	2	2				4					24	7
											1	8
1											1	9
											1	10
1											2	11
											1	12
											2	13
											1	14
											2	15
	1										10	16
											7	17
			1	1	1						6	18
2											5	19
8	5	1	5	4	9						72	20
					1					815		21
						1	1				6	22
											1	23
1			1								1	24
	1											1
1		1				1					9	26
1											3	27
1	2	1		1		1					6	28
				1							11	29
										16		30
											1	31
20	14	6	8	7	12	9	3	1	0		207	143

TABLE

RAPID DECREASE, SHOWN GRADE BY GRADE, IN CASES OF HARD

	First		Second		Third		Fourth		Fifth	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
1. Baltimore, Md.....	2	1					3		1	1
2. Bayonne, N. J.....	1			1	1					
3. Beaver Dam, Wis....				1			2			
4. Binghamton, N. Y....	1	1	3	1	2	1				
5. Boston.....					1		1		1	
6. Buffalo, N. Y.....	7	4	3	1	4	1		1	2	
7. Cleveland, Ohio.....	1			2			4	1		
8. Detroit, Mich.....	1	4	4		3	2	2	1	1	1
9. Green Bay, Wis.....			1		1	2				
10. Houston, Texas.....				1					1	1
11. Jackson, Texas.....	1									
12. Janesville, Wis.....	1									
13. Jersey City, N. J....	1		1		1					
14. Kalamazoo, Mich....	1		3	1	1	1		2	1	
15. Kenosha, Wis.....										
16. Los Angeles, Cal....	6		1		1	3	2			
17. Manitowoc, Wis.....	1				1		1			
18. Marinette, Wis.....				1			1		1	
19. Milwaukee, Wis.....	1	1		1	1		2			
20. Minneapolis, Minn...	14	8	13	5	3	1	5	3	3	4
21. Montclair, N. J.....	1		1							
22. New Orleans, La.....	6	7	3		5	1	3	2	2	1
23. Oshkosh, Wis.....					1		1	1		1
24. Passaic, N. J.....									1	
25. Philadelphia.....	25	19	19	22	8	16	13	9	9	11
26. Providence, R. I....		1	2			2		1	1	1
27. Racine, Wis.....		2	1		1					
28. Reading, Pa.....	8	3	3	1	4	3	2	3	3	3
29. Richmond, Cal.....					1	1	1			
30. St. Louis, Mo.....	2		1	3	3	3				
31. San Francisco.....	1				1		2		3	1
32. Sheboygan, Wis.....	2				2					
33. York, Pa.....		1		1		1				
Totals.....	84	52	59	42	46	38	45	24	30	25

THE DEFECTIVE IN SPEECH

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10

OF HEARING SPEECH AS A RESULT OF SPEECH CORRECTION WORK

Sixth		Seventh		Eighth		Ninth and Tenth		Eleventh and Twelfth		Undis-tributed	Totals		
Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls		Boys	Girls	
											6	2	1
						1					3	1	2
											2	1	3
											6	3	4
											3	—	5
		2									18	7	6
1											6	3	7
2		1					1	1			15	9	8
											2	2	9
											1	2	10
											1	—	11
											1	—	12
											3	—	13
											6	4	14
		1									1	—	15
1		1	1	1			1		2		13	7	16
											3	—	17
1											3	1	18
		1									5	2	19
3							1				42	21	20
1											3	—	21
2	2			2	1						23	14	22
											2	2	23
											1	—	24
9	8	3	7								86	92	25
	2		1	1	1	1					5	9	26
		1									3	2	27
2											22	13	28
2											4	1	29
1											7	6	30
2	3	1	1	1	1		1				11	7	31
											4	—	32
											—	3	33
27	15	11	10	5	3	3	3	1	2	—	311	214	

TABLE

RAPID DECREASE, SHOWN GRADE BY GRADE, IN CASES OF PARALYTICS

	First		Second		Third		Fourth		Fifth	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
1. Appleton, Wis.....								1		
2. Beaver Dam, Wis....									1	
3. Beloit, Wis.....	2				1	2			1	
4. Binghamton, N. Y....					4		1			
5. Boston.....								1	3	
6. Buffalo, N. Y.....	6	2	3	2	2		2	2		1
7. Cleveland, Ohio.....				1						1
8. Detroit, Mich.....	6	4	3	1	4	4	2	2	3	2
9. Eau Claire, Wis.....		1		1	1		1			
10. Green Bay, Wis.....		1								
11. Houston, Texas.....		2		1	1	1				1
12. Jackson, Mich.....		5	1		1		2			1
13. Janesville, Wis.....		1								
14. Kenosha, Wis.....	2		1	1		1		3	1	
15. La Crosse, Wis.....	1									
16. Los Angeles, Cal....	3		5	2	3	1	1	1	2	1
17. Manitowoc, Wis....				1						
18. Mankato, Minn.....				1		1				
19. Marinette, Wis.....			1			1				
20. Milwaukee, Wis.....	1	1		1	1	1				
21. Minneapolis, Minn...	1	1		4	2	1	3	2	1	1
22. Montclair, N. J.....		1								1
23. New Orleans, La....	5		2	1	2	1		1	1	
24. Oshkosh, Wis.....		1					1	1		
25. Pasadena, Cal.....		1		1				2		
26. Passaic, N. J.....								1		
27. Providence, R. I....						1				
28. Racine, Wis.....		1	3	1		1				
29. Richmond, Cal.....		1	1							1
30. St. Louis, Mo.....	5	2	5	2		1	1		1	
31. San Francisco.....	2	4		2		4	3	5	4	1
32. Sheboygan, Wis.....	1		2			2		1		
33. Washington, D. C....										
34. York, Pa.....	4	1	5	1	1	2	1			
Totals.....	39	30	32	24	23	25	18	23	18	11

11

ARTICULATORY AS A RESULT OF SPEECH CORRECTION WORK

Sixth		Seventh		Eighth		Ninth and Tenth		Eleventh and Twelfth		Undis-tributed	Totals		
Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls		Boys	Girls	
1										—	1	1	1
1										—	2	—	2
1										—	5	2	3
										—	5	—	4
				1	1	1			1	—	5	3	5
										—	13	7	6
										—	—	2	7
2	1									—	20	14	8
1										—	3	2	9
										—	—	1	10
										—	1	5	11
										—	4	6	12
										—	0	1	13
										—	4	5	14
										—	1	—	15
3	1			1	1	5	1	1	0	—	24	8	16
										—	—	1	17
										—	—	2	18
										—	1	1	19
	1									—	2	4	20
	1									—	7	10	21
										—	—	2	22
1	1	1								—	12	4	23
										—	1	2	24
	1					1				—	1	5	25
1		1								—	2	1	26
			1			2		1		—	3	2	27
										—	3	3	28
										—	1	2	29
1										—	13	5	30
2	1	3	2			5	2	1		—	16	26	31
	1									—	3	4	32
										—	11	—	33
										—	11	4	34
14	8	5	3	2	7	11	2	2	2		164	135	

DISTRIBUTION OF TYPES OF DEFECTS

For detailed figures see Tables 3 to 11 inclusive, pages 358 to 375.

TABLE 12

THE VARIOUS TYPES OF DEFECTS SHOW THE FOLLOWING DISTRIBUTION IN 10,000 CASES

	No. of cases reported	Reduced to 10,000
Sound substitution.....	30,027	4,623.8
Stuttering.....	14,384	2,214.96
Oral inactivity.....	7,445	1,146.44
Structural articulatory.....	5,585	860.02
Dialectal.....	3,718	575.64
Functional voice.....	1,498	230.67
Structural voice.....	1,178	181.38
Hard of hearing.....	524	80.69
Paralytic articulatory.....	310	49.28
Aphasias.....	197	.33
Paralytic voice.....	79	.17
<i>Totals.....</i>	64,945	10,005.38

The Madison survey showed the following distribution:

	No. of cases classified	Reduced to 10,000
Oral inactivity.....	330	4,851
Structural articulatory.....	72	1,059
Stuttering.....	70	1,029
Sound substitution.....	69	1,014.3
Functional voice.....	69	1,014.3
Dialectal.....	32	470.4
Structural voice.....	30	441
Paralytic articulatory.....	4	58.8
Aphasias.....	2	29.4
Hard of hearing.....	1	14.7
Paralytic voice.....	1	14.7
<i>Totals.....</i>	680	9,996.6

The striking difference between the results of the Madison survey and those obtained from the questionnaire is in the number of sound substitution cases and oral inactivity cases. However, if in both surveys the two are added together the Madison survey shows 5,865 cases in 10,000 and the questionnaire survey shows 5,770.24. This, considering the size and limitations of the Madison survey, is

not a material difference. The explanation is that what most speech workers call sound substitution, the Committee has called oral inactivity, and has reserved sound substitution for more specialized difficulties with particular sounds.

Other differences between the Madison results and those shown by the questionnaire survey are probably not material.

LIMIT OF WORK

The work of speech correction is entirely limited to the city public school systems; the rural communities and smaller towns are without facilities for the correction of the child defective in speech.

The work of speech correction is prosecuted more efficiently and economically in the primary years of the child's schooling than later.

Cost. The average cost for each pupil in a program of speech correction as now organized is approximately \$10 per annum.

Table 1 (p. 350) shows the cities that have reported costs of speech correction programs, the number of people treated and the average cost for each pupil. If the total amount spent per annum in all of these cities is divided by the total number of cases treated the result is \$9.62. If the cost for each case is found by averaging the average cost for each case reported by each city the result is \$11.69.

THE SCOPE OF SPEECH CORRECTION

Before introducing the recommendations, the following definitions are offered of the various activities that must be carried on in an attempt to solve the problem of the speech defectives among our children:

Speech Correction Proper. The practice in schools, clinics or private offices of the art of retraining the language habits of those defective as to speech; stimulating and developing the language habits of those retarded as to speech, and arresting and preventing the development of incipient disorders of speech.

Training of Practitioners. The teaching in normal schools, colleges and universities, of those who are later to have the responsibility for the re-education of speech defectives. This teaching will be both theoretical and clinical.

Research. A professional study, largely in the clinic or laboratory that should lead to a better understanding of the nature of pathological conditions of speech and to better methods of correcting such conditions.

RECOMMENDATIONS

1. The work of speech correction should be extended so that every "unit" of the school system of the country shall have a speech correction department of its own or shall have the services of such a department. The term "unit" means every school system having its own autonomous superintendency. In cities the work should be organized under the superintendent's office, and in rural districts and in villages it should be presented under the direction of the office of the county (or parish) superintendent of schools.

2. The work should be prosecuted in connection with the regular program of school work, the children defective in speech to be educated with normal children except for the periods when they shall be given their speech training. These periods should be not more than thirty minutes in length and as frequent as the "case load" will permit. As far as possible these children should be given their speech training in some room in the same building in which they do the rest of their work.

3. The program of speech correction should be regarded partly, if not largely, as speech hygiene; and as such emphasis should be placed upon the arrest of incipient disorders of speech when they first appear. The ideal program of speech correction should embrace the entire school system; inasmuch, however, as the most effective results are achieved with the young children, the superintendent having limited funds for this work should concentrate his forces upon speech hygiene of children in the lower grades.

4. Most cases of speech defect must be handled individually, but in rare instances children with similar defects should be handled in groups. It should be pointed out, however, that speech disorders are hardly ever "typical" and that because of the individualistic nature of each case, it seldom happens that in a relatively small building more than two or three children will be found having defects sufficiently similar to profit by group training.

5. For the sake of economy of administration, the defective children must be classified into four groups, the probable size of which is indicated by the percentages following each:

a. Those whose defects are remediable, but whose intelligence is so low as to render the advantage of exact speech not worth the effort to secure it (3 per cent).

b. Those whose defects are irremediable; such as defects caused by inoperable structural anomalies (2 per cent).

c. Those whose defects are remediable but not by the standard methods employed with other defectives having similar symptoms; such as a case presenting complications of two or more independent causes (10 per cent).

d. Those whose defects will yield to standard methods; presenting no complications or deviation as to etiology (85 per cent).

Group (a) should be trained to a degree of speech proficiency commensurate with their intellectual capacities and needs.

Group (b) should be left out of the speech training program. To attempt the training of such children serves only to make them unnecessarily self-conscious and anxious about their speech.

Group (c) should be referred to workers whose training and experience especially equip them to handle such cases. These cases are properly clinic rather than classroom problems.

Group (d) should be trained by the general staff of the speech correction department. In order that this training should proceed advantageously and efficiently it is necessary that the teacher employ from the beginning methods appropriate to the case. Proper diagnosis of the cause of each case of speech disorder becomes, therefore, one of the major factors in economy of administration.

6. In most schools in which the work has been established the "case load" of the teacher of speech correction should be greatly reduced. Inefficient work serves only to discourage pupils and parents about remediability of defects of speech. The efficiency of the work decreases rapidly beyond a load of 100 cases for each teacher, and increases as the load is reduced below 100 cases. A load of 50 cases should be considered optimum.

7. In order to carry out the diversified program as outlined above, there should be established in each city (or county, for the rural schools) a speech clinic to which problems difficult to classify, diagnose, or treat should be referred. Usually the director of the department of speech correction will be the clinical officer.

8. The training of the worker in speech correction should be more than that required of general teachers of the same rank, and the additional work should include a well balanced offering selected from the following subjects: phonetics, physiology, anatomy, neurology, psychology, education, psychometrics, biochemistry, genetics, sociology, physical education, and speech (including both the artistic speech and speech pathology). In order to provide for the extended program suggested—a program many times larger than the one now in use—it seems logical that there must be organized teacher-training courses in speech correction in institutions where large groups of young children are used as material for demonstration and practice teaching. It will probably come about, therefore, that the staff members of the speech-correction departments of our public schools will receive their training in teachers colleges or in schools of education in universities, and that the trainers of these teachers will have received their technical education in the gradu-

ate schools of universities offering very advanced work in speech pathology. The directors and clinical officers of each large school system should have received their training at one of these graduate centers.

9. In order to support a sound program of speech hygiene, teacher-training institutions should include elementary courses in speech disorders as a part of the training of primary teachers; and superintendents should, everything else being equal, give preference to candidates for positions in the lower grades who have had such training.

10. There should be established in the United States one or more institutes for research as to the cause and prevention of and the proper training and treatment for the various disorders of speech, and the findings of such institutes should be made available to the worker in the field of speech correction.

■

LOWERED VITALITY

■

LOWERED VITALITY

TYPES OF CASES

UNDER the term *lowered vitality* are included all those types of cases which, without distinct or visible evidence, physically handicap a child. These types seem to come under this general heading because, although the actual body is physically intact and able to perform all functions, yet there is not enough strength to keep it at work over sufficient length of time, or with the speed required for normal competition in life's struggle.

The types of cases of lowered vitality included in this report are outlined in the following classification:

1. Tuberculous

Tuberculous contact and tuberculous history cases resulting in childhood type of tuberculosis and adult type of tuberculosis.

Other chest conditions

Following pneumonia, influenza, empyema; also asthma and chronic bronchitis cases.

2. Cardiopathic and circulatory disturbances; also hemophilia, and exophthalmic goiter cases.

3. Malnutrition

Essentially (insufficient or unsuitable diet)

Secondary to

Local infections (tonsils, teeth and so forth)

Parasitic infections (hookworm, ascaris and malaria parasites)

Fatigued child

Faulty assimilation

Congenital malnutritional deficiencies

Anemic children—secondary to various causes

4. Encephalitis lethargica

5. Epileptics

These classifications have been made for school administrative rather than medical purposes.

It must be remembered always, that a child who is physically handicapped in any way has to make a much greater effort to accomplish a given task than does a normal child. Hence, the danger of over fatigue is always greatly increased, and becomes a factor against which the child must be most carefully and zealously guarded.

1. Tuberculous children and those with other chest conditions such as asthma and convalescent cases from pneumonia, where resolution is delayed, and cases convalescent from influenza, with symptoms of chronic bronchitis, and also empyema, present similar conditions demanding the same special school care.

2. Cardiopathic children and associated cases should be recognized as a distinct group and not classified as crippled, which is a term that should be confined to orthopedic cases or the visibly handicapped.

Within their capacity for activity, cardiopathic children can work with equal efficiency as do average or normal children, but their vitality is exhausted sooner, due to the excessive amount of energy required and because the total available energy is small compared to the normal. The danger, of course, is always over-fatigue, which would lead eventually to heart muscle strain. In children with weak and damaged hearts this is still further aggravated by periodical recurrences of the causative factors of infection which often appear without warning and leave increased heart disability. This fluctuating heart condition adds another factor to the difficulty these children experience in attempting to maintain continuously the speed and endurance of normal children, at school or at play. Hemophilia cases are included in this group of circulatory handicaps. The danger lies in the loss

of blood which would result from a slight injury that would have little effect upon a normal child. The physical disability which follows a bruise also disables such children for regular and continuous school attendance.

Exophthalmic goiter cases have also been included in this group instead of under the glandular conditions, because ordinary enlargement of the goiter itself does not give any particular physical disability, and vision does not constitute the real handicap, but the exceptionally high pulse rate and attendant nervous and weak conditions are the factors which cause great concern to the patient. They are likewise a problem to the educator and physician in charge of such cases and require special school adjustment in special classes similar to those of the cardiopathic and circulatory disturbance cases.

3. Malnourished children are classed under two groups: The primary or essentially malnourished children, for which condition the causes are usually insufficient or unsuitable food; the secondary malnourished group, where the real causative factors may be local infection from the tonsils, teeth, and other infections, or parasitic infections, chiefly hookworm and ascariasis. Malaria is also a prominent causative factor of this group; Texas places it first among the causes of malnutrition and absence from school.

There is a third group of malnourished children that is difficult to define, and constitutes that group vaguely called the "tired child," where, from a medical viewpoint, no real causative factor, except fatigue, can be distinguished. It is a type that has either a low vitality potential and cannot keep pace with the school and play activities of normal children, or is another type of child who, though he possesses as high potential capacity or vitality as any normal child, insists upon overdoing everything, keeps late hours, does not stop when tired but continues to the point of exhaustion. He continues this day after day, until finally through the cumulative effect, he is so chronically tired that he becomes a definite problem.

There is a fourth group of malnourished children whose difficulty is caused by faulty assimilation, with functional disturbances due to fatigue, to poorly chosen food, and to fermentation of food on account of faulty evacuation of waste products. Sometimes this faulty assimilation in the digestive tract is believed to be functional rather than pathological.

A fifth group represents a vague group that was once known by the general term *marasmus*. In many cases marasmus indicates indifferent care or understanding, on the part of the practitioner, of proper feeding principles. Many cases, however, defeat the most scientific attempt to find the causative factor that disturbs the assimilation. It may be certain intolerances which must be avoided and perhaps could be if more were known of these conditions.

A certain number of congenitally weak children exist who are malnourished and anemic, for whose condition no definite cause can be found. This, however, may be due to inherited factors, the parents not being very robust. There is probably some deficiency in prenatal nutrition. These deficiencies continue after birth, sometimes until the death of the child, which occurs usually at an early age. Other children survive and apparently overcome these deficiencies in varying degrees, some even becoming robust in later life.

A sixth group includes children who are anemic from various causes and might be advantageously grouped for practical handling in schools with other physically handicapped children, particularly the malnourished. It is very common to see the two conditions associated in the same case, and we believe that any prolonged malnutrition case will eventually show amenia, and that any anemic case from any cause, will eventually show malnutrition. For administrative purposes it would be preferable to group malnourished and anemic children, rather than to make two subdivisions.

In a public school, each type of case, as outlined, must be considered administratively as well as clinically. There is the economic and practical possibility of utilizing one special class for the education of the several types having cor-

related medical defects and requiring similar treatment. At other times, there must be a distinctly different class for single medical types for efficient administration in schools, and for the adjustment of the children later.

In many respects cardiopathic children are handled administratively somewhat like tuberculous children in their health program. This consists essentially of more rest and less activity and a modified and adjusted school academic program adapted to individual physical ability.

Similar treatment should apply to the fatigued children who are often acutely tired and are in a special class temporarily while they are recuperated and taught the proper health habits of living, and also to the chronically fatigued children who resist all efforts to keep them within the bounds of their physical capacity. Failure in this, however, must be attributed more often to the parents than to the children themselves.

The convalescent strength and individual factors vary in each condition. It is essential to study these conditions in order to adjust the needs of each group through special education, medical and health care, and the type of classroom.

The chronically asthmatic should be placed in open-air and open-window classes, preferably in outdoor classes in day camps.

4 and 5. Encephalitis lethargica and epileptic cases have been placed in this classification because they exist in sufficient numbers to constitute a definite school problem.¹ Some of these cases are mentally handicapped also. Provision for education and training, however, is being made in certain school systems, particularly New York City, Chicago and Detroit for both of these types.

It is recommended that further study and research be made of these problem cases so that the psychiatrists and neurologists may guide school authorities in the adjustment of these neglected children. The means towards this end are

¹ Both of these types of cases are also covered in the outline of *Internal Conditions* in Section IV on the Handicapped Child.

provision of rightly-adapted special education, training, and eventually, successful placement in suitable vocations.

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The so-called special class, except classes for defects of vision and hearing, has usually a simplified, modified, academic curriculum adapted to the physical conditions and the prognosis of each type of case. The special points of emphasis are the gaining of health and strength through rest, proper diet, medical care, and an adapted activity and health program to the end that the child may improve sufficiently to return to a regular class or enter a life's work to which his abilities are adapted.

There must be the need for such classes. This can be determined by ascertaining the number and distribution of cases, age, sex, nationality, and other influencing factors.

PURPOSES

In the study of the health, protection, and education of children of lowered vitality, five fundamental considerations are recommended.

1. Early discovery through definite and continuous methods;
2. Rehabilitation physically through a convenient and economical medical, nursing, and health-care service;
3. Education, training, and socialization by suitable school adjustment, with stress upon ability, rather than disability;
4. Placement in society where the children can make their best contribution happily to the world's work;
5. Follow-up of careers as a guide and measure of the efficiency of special education.

The Finding of Cases

There are children of lowered vitality in every community who escape notice because their handicap is not distinct or visible. They are found only when they have arrived at the point of failure to compete successfully in school life with physically normal children and must finally be suspended or discharged. Efficient, continuous, and routine methods, therefore, should be established to locate such children early in their lives before too much damage has been done.

Most cities and communities have organized groups within the school system only for the selection of cases of lowered vitality.

The New York City method utilizes every organization of the community that comes in contact with these children, besides the special division in charge of physically handicapped children. Each child is reported to a designated official of the Board of Education, and a medical record from the family physician or specialists in the clinic or hospital, where the child is under treatment, accompanies this report. Treatment is established for untreated cases. These reports are received from:

The Board of Health. Prompt notice of all cases of encephalitis, pulmonary tuberculosis, other chest conditions, and malnutrition cases through school surveys and examinations by the medical squad of specialists of the Board of Health

Baby health centers and preschool age clinics

Health certificates required by the Board of Education for all new entrants to school; thirteenth year health examination

Principals of schools, through the daily morning hygiene inspection of all school children by regular class teachers, who are trained for this duty

Annual Health Day, when all school children are inspected for definite defects by regular class teach-

ers and school nurses, and reviewed by school doctors and officials of the Department of Health Education

Clinics, hospitals, convalescent homes for all children of lowered vitality of school age who are discharged

Bureau of Attendance, all cases suspended or discharged or not in school due to physical disability

Family physician and specialists concerning their patients

Social service workers and all philanthropic agencies.

This method is applicable to cities, towns, villages, and even rural districts. The size and scope of the problem in large cities require a large number of reporting agencies but the administration could be greatly simplified in smaller communities. The method has the added value of establishing facilities in regard to the remaining four considerations.

Rehabilitation Facilities. These are established at the time of the child's discovery through a convenient and economical method of medical and health care as a basis for special school adjustment.

This health care is based upon the recommendations of the attending physician and entails no cost to the board of education.

Education, Training, and Socialization. Special education and training are then adapted to each child's physical ability and the prognosis of each case, while health instruction parallels academic instruction to: (a) prepare children to return to regular classes; (b) educate them to understand health regulations and to apply health education to improve and maintain their physical condition.

Socializing these handicapped children is an essential consideration in their successful placement after education, and is entirely dependent upon the type of special school adjustment and humane method which is selected for segregation. This has been outlined in another paragraph.

Following-up the careers of the children of lowered vitality is not only a measure and guide of the success and efficiency of the methods employed in the training, education, and placement of such handicapped children, but it affords an efficiency standard through which states, cities, towns, and rural communities may measure the extent of their own programs in comparison with those which produce the most economic and constructive results.

INCIDENCE

Owing to wide variations, the available statistics of children of lowered vitality do not give an accurate or adequate picture. However, comprehensive studies made in various large cities and communities will serve to show the country-wide need for special education of these types of cases.

Tuberculosis—Childhood Type

The statistics concerning children afflicted with pulmonary tuberculosis cover more communities than those of any other group of children of lowered vitality. In view, however, of recent experimental studies and more widespread use of definite diagnostic tests of the tuberculin reactors in school children, many of these statistics will be modified.

The Health Commissioner of New York City discloses the following important facts: It is estimated that between 60,000 and 90,000 school children, including high school children in Greater New York, have definite lesions of tuberculosis, traceable to contact with other cases; that thousands of these are suffering from advanced stages of this disease; that research has proved that tuberculosis is not a disease originating in adult life primarily, but is the result of the childhood type of tuberculosis, and that nearly 6 per cent of tuberculous contacts have tuberculosis.

The statistics¹ of Dr. P. T. McCain, Superintendent of

¹ McCain, P. T. *Summary of Results Obtained at School Children Tuberculosis Clinic*. See Appendix, page 431.

North Carolina Sanatorium, show 21.1 per cent positive tuberculin reactors in white children and 21.9 per cent in colored.

Incidence. Physical examinations and X-ray pictures of these reactors show 3 in 200 white children and 6 in 200 colored had tuberculosis.

Under the Chadwick Ten Year Program ¹ (not including children of high school age): 28 per cent reacted to tuberculin tests; 1.5 per cent had the childhood type of tuberculosis; 3.4 per cent were classified as suspicious cases; one case of adult type of tuberculosis was found in each 3,200 children.

Reflected country-wide, approximately: 7,000,000 school children would be positive reactors; 375,000 have tuberculosis (childhood type); 850,000 are suspicious cases; 7,812 have adult type of tuberculosis.

This incidence would be approximately doubled in colored children.

Mortality. A study of the mortality rate shows that there is still much to be accomplished for tuberculous children. The death rate in seventeen largest cities ranges from 73 to 170 for each 100,000.²

In New York City, since 1920, the greatest decline in the tuberculosis death rate has been among children, the largest reduction, 57 per cent, during the period 1920-1928, occurring at the ages five to ten years.³ This reflects the good results obtained by the New York City school system from the continuous stress placed since 1904 upon preventoria and the organization of open-air and open-window classes and outdoor classes for tuberculous children in day camps as fundamental prophylactic measures. Combined with suitable treatment, rest, good food, and educational health-care,

¹ Chadwick, H. D. and McPhedran, F. M. *Childhood Type of Tuberculosis*, p. 26.

² Barnard, W., Amberson, J. B., and Loew, M. F. *Tuberculosis in Adolescence*.

³ New York City, Board of Education, Division of Physically Handicapped Children. "Experimental Study, 1915." Annual Reports, 1918-1920-1921. See Appendix, pp. 431-432.

much has been done to prove that the spread of tuberculosis can be checked.

Tuberculosis is a preventable and curable disease and the importance of early discovery of the infection in children lies in the fact that the childhood type of the disease is, with few rare exceptions, always curable. However, should these infected children fail to receive proper care it is they who eventually furnish the source of adult tuberculosis. Only by concentrating upon the early discovery of the childhood type of tuberculosis, instituting preventive measures, and rousing country-wide interest in the vital need of open-air classes, day camps and preventoria can it be hoped to achieve the conquest of tuberculosis.

Cardiopathic Conditions

The study of statistics on heart disability and mortality rates indicates that this is a public health problem of the first importance. The incidence of heart disease in school children varies in each community but this is due to lack of a definite and constructive method of finding cardiopathic cases and classifying them through expert examination.

The method used in New York City and most of the other large cities is the classification of the American Heart Association.¹ Class II A and II B are selected for special classes; Class II B borderline and Class III chair cases, for home instruction upon the recommendations of the attending physician; Class III bed cases are unable to receive school instruction.² In order to have uniformity throughout the country, it would be advisable to use this method of classification as a guide in school adjustment.

Incidence. Through the squad method of school medical inspection by experts in New York City, it has been found

¹ See classification, Appendix, p. 432.

² New York City, Board of Education. Medical and Clinic Record Cards—Cardiopathic Children. 1930.

that 4 per cent of the children are suffering from weak and damaged hearts.

The surveys¹ in large cities from 1922 to 1926 indicate that the incidence of organic heart disease in school children ranged from 17.0 for each 1,000 in Chicago, to 6.6 in Boston, and 6.3 in Philadelphia. New York City showed 16.0 in 1918 and 13.9 in 1922. These statistics are based upon the classification of the American Heart Association and have, therefore, a common basis of comparison.

In New York State, as in the United States as a whole, the incidence of cardiac defects is higher in urban than in rural areas.²

Heart disease is more serious among Negroes than white children.

Mortality. It is estimated that for every death from heart disease in a community there are 10 cases of sickness from the same cause. It was the leading cause of death for all ages in 1928.

The New York Life Insurance Company reports an increased mortality from heart disease in children from a rate of 13 per cent to 17 per cent in 1929. Experimental study has shown that a high proportion of these deaths could be prevented through early discovery, medical treatment, and special school adjustment. Attention is therefore directed to the vital need of special classes to aid in reducing these alarming numbers. Heart disease is rapidly replacing tuberculosis in incidence and mortality. (See Appendix, p. 433.)

Malnutrition

The ratio of malnourished children varies from 60 per cent in some counties of Alabama, due to the hookworm problem, and in Texas, as a result of malaria, and from 40 per cent in many of the large cities, to 4 per cent in

¹ Chicago Association for the Prevention and Relief of Heart Disease, vol. 5, 1928. Philadelphia Board of Education, Div. of Medical Inspection, Annual Report, 1924.

² New York State Medical Society. Report of Committee to make a Study of Heart Disease. 1928.

communities where there is an efficient health program in operation, and where children live in families with good home control and no financial stress. A conservative estimate of findings indicates that approximately 6,000,000 children of school age in the United States are malnourished.

Encephalitis Lethargica

The statistics for cases of encephalitis are scarce, but investigations have shown that these unfortunate children exist in sufficient numbers to make it necessary to recommend school adjustment for them.

Epilepsy

The available statistics upon the incidence of epilepsy in children of school age are very inadequate, with no definite information as to whether cases of true epilepsy are included. The survey of New York City in 1927 and subsequent record of all cases temporarily suspended or discharged from school, show an incidence of approximately one in 1,000 which, however, is lower than that usually quoted by neurologists. These figures also include parochial schools, since no provision for epileptics is made in special classes in these schools.¹

NEED FOR SPECIAL EDUCATION

It is evident from the foregoing statistics that there is great need for special education and training of all cases of lowered vitality.

Because these children are afflicted with an invisible handicap little, at present, is done to help them educationally. Their frequent absences from school due to physical disability result in suspension, or even discharge from school and those who return when physically able are over-age for

¹ New York City. Public Schools. "Experimental Study." Annual Report, 1929-1930. Gower, W. R., *Epilepsy and Other Chronic Convulsive Diseases*. Jelliffe, S. E., *Diseases of the Nervous System*. Spratling, W. T., *Epilepsy and its Treatment*. See Appendix, p. 434.

their grade and become discouraged and embarrassed by association with younger children, often being outstripped by younger brothers, sisters, and friends. Frequently they are taunted by their associates as being too dull to attend school.

This leads to the development of a real psychological condition, thereby adding to their difficulties. Many times such children finally feign attacks of illness over long periods in order to remain out of school, as the road of least resistance against these troubles over which they have no control.

All this neglect eventually produces dependent adults of lowered vitality. They are physically incapable of performing unskilled labor and are untrained for skilled work within their physical ability.

An impression has developed in the minds of educators, and even some physicians, that such children cannot profit by instruction. In fact, several educators have stated frankly that discharge from school is the only solution. They believe the crippled child must have first consideration for special education, since his visible handicap appeals and is readily noted by everyone. For these reasons it has been possible to start a country-wide movement to educate the crippled, especially since the World War, and as a result criticism is more liable to arise for the neglect of crippled children than for those with invisible handicaps. At least these children of lowered vitality can attend school at intervals and cause little comment when officially suspended and therefore school officials are not liable to be censured for their neglect.

In view of this attitude some general and easily understood standard is necessary for designating these various types of lowered vitality cases. This can be applied when selecting them from groups of normal children for the purpose of expert examination and school adjustments.

In New York City, such children are selected for examination and placement in special classes, if they cannot attend a regular class with profit and safety to themselves or others

or without special privileges; and they are eligible, through the same regulations after inspection, for home instruction if they cannot physically attend special classes.

Educators in America have believed, for the most part, that American schools were providing equal opportunity for all children to develop their abilities to the fullest extent. It is gradually becoming apparent that such is not the case.

From this study it is evident that in many communities children of lowered vitality are not given the same amount of schooling as normal children, either in number of years, length of school day, number of days of attendance, or courses of study. They escape the compulsory education law on the basis of physical disability which, however, could be enforced through the provision of special education and accommodations.

WHAT IS BEING DONE

Questionnaires concerning the selection and education of children of lowered vitality were sent to city superintendents of schools, city commissioners of health of all cities with populations of 10,000 or over, and to all state commissioners of education and state commissioners of health.

Summarized by cities, types of cases and class, these show interesting conditions, shown in Table 1.

TABLE 1

CITIES PROVIDING SPECIAL CLASSES FOR CHILDREN WITH LOWERED VITALITY

Size of city	Tuberculous children, adult type	Tb. contact, Tb. history, and malnourished children	Cardiacs	Epileptics	Encephalitis lethargica cases
250,000 and over	7	11	6	3	1
100,000 to 250,000	0	8	1	3	1
10,000 to 100,000	0	16	6	(Home Teachers) 0	(Home Teachers) 0

The interesting report of *Special Schools and Classes* by Dr. A. O. Heck states that 126 cities in the United States have open-air classes.

The summary of the findings of the Committee indicates that for children of lowered vitality there is a distinct country-wide lack of opportunity for special education, with wide breaks in the continuity of their present education. Only after their discovery has been made through discharge from school, often too late for recovery, is some effort made, in comparatively few places, for special education. This is disheartening to the parents and children and expensive for the communities.

With the exception of children suffering from the adult type of tuberculosis, who are hospitalized and under instruction in some hospitals, convalescent homes, and state or municipal sanatoria, the special facilities provided in these cities for the education, training, and placement, and for health and medical care of children of lowered vitality may be summarized under five methods.

- Central schools for the segregation of children in open-air classes—tuberculous contact and history cases and malnourished children.

- Special classes in central schools for all types of handicapped children: the crippled, the blind, partially seeing, deaf, hard of hearing, cardiopathic, ungraded, and disciplinary.

- Placement of small groups of children of lowered vitality in classes of crippled children, classifying them as cripples: cardiac-cripples, epileptic-cripples, encephalitic-cripples.

- Construction of special units for handicapped children in public school buildings in order to localize special school care near the homes of the children. This helps to socialize them by permitting association with physically normal children in school activities as in New York City.

- Home instruction for cardiopathic children, epileptics, and encephalitis cases.

Apart from the hospitalization of children afflicted with the adult type of tuberculosis, unfortunately very little is

done for cases of lowered vitality in rural districts and apparently nothing for those in isolated places.

While each method outlined has its advantages, two factors must always be kept clearly in mind: (a) The method which produces the best results for the child, for his treatment, education and training, and for socializing him, and eventually, for his ultimate contact with the world's work; (b) Economy of administration, since this will ensure a country-wide procedure for every child whether in city, town, or rural district.

Methods 1, 2, 3 simplify the work of the administrator by centralizing all special school adjustment, and medical and health care in one or two school buildings. The prohibitive cost of special school buildings and the high maintenance costs of these methods have hindered the expansion of special education throughout the country, and have excluded small school systems and isolated places from consideration.

The main objection to these methods is the personal attitude of the child of lowered vitality who, because his handicap is not visible, does not consider himself handicapped and who through centralized segregation cannot obtain the most profit from his special education. Furthermore, there is danger that the objectives of special education are submerged in so much central organization.

These methods have been established after years of careful study and have many advantages:

- Socializes the handicapped child, which is an important factor in his adjustment after his education and training are completed.

- By associating the handicapped child with normal children, who are the general public of the future, both are educated to think of the handicapped child's ability rather than his disability.

- Localizes the special school-care facilities near the home, thus bringing the facilities to the child instead of the child to the facilities. This encourages

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local forces to unite in an effort to aid the handicapped in accordance with local possibilities.

Uses the same principals, assistants, and staff to supervise both normal and special classes in the same school building, thus economizes on administration and

Economizes on construction and maintenance. Construction of the special unit for the handicapped costs no more than classrooms for normal children. Furthermore, it (a) eliminates high cost of construction of special schools for handicapped children only, which is a tremendous obstacle to the country-wide expansion of education and training of such children. (b) Eliminates high maintenance costs, which in central schools range from \$100 to \$400 more for each child yearly than for normal children. (c) This economical administration and unit construction allows money for a maximum salary of \$3,830 for expert and technically-trained teachers, the most important factor in the education and care of handicapped children.

Reduces the high cost of transportation to 50 per cent lower than the lowest state cost.

Eliminates long tedious stage transportation and thereby conserves the health and strength of handicapped children for school work.

Allots budgetary allowances for educational purposes only. Existing city organizations are used for all other services needed. No service is duplicated in the schools which can be otherwise obtained. This serves to: (a) Educate public opinion by arousing widespread interest in the handicapped. (b) Interest public-spirited citizens to give time and money for nurses, medical, surgical, and dental care, and follow-up which helps in the later placement of children. (c) Constitute through this interest a logical, economical, and practical follow-up system. (d) Enable children when they move

to various districts or are transferred to regular classes to still use local or city agencies for special service, which necessarily ceases when they leave a central school.

This method can be applied to cities of all sizes and to small towns. Its economy is appealing.

The extensive new public school building plan of the City of New York includes a unit for the handicapped in selected schools in definite school districts, thus constituting a harmonious city-wide organization for the handicapped. Practically each new school is equipped with an open-air classroom beside the 177 classes in the present organization.

These units are so planned that they can be added to any school even after construction and would therefore be practical and economical for any school system to utilize in connection with old schools or as units in new schools, either as a one-unit organization or a city-wide service.¹

Home instruction provides special education and training for home-bound cardiopathic cases, epileptics and encephalitis cases. It can be applied to rural districts with successful results, and through a traveling-teacher unit, even isolated places can be included.

The advent of the teacher opens the door of hope, opportunity, and happiness for any home-bound, physically handicapped child. No factor which touches the life of these children produces such influence for their profit, as the home teacher. Through her the cooperation of the parents and the community is readily obtained. The teacher should follow each traveling medical and health unit.

Cost

The cost of special education has been difficult to ascertain due to the fact that various cities and communities include different factors in estimating the total per capita cost.

¹ *Blue Prints and Specifications of Special Units for the Handicapped.* Branch of Construction and Maintenance, Board of Education of New York City.

The report of the National Education Association of 1930 concerning a study of twelve cities of over 400,000 population, publishes special education costs. The unit of these costs, however, is difficult to use for comparison, due to the lack of uniformity of the items which have been available for this report. In some cities, the budget for special education is permitted for educational activities only. All health, medical, social, and recreative activities are operated through other agencies in the city without cost to the board of education, as in the City of New York. In others, the high maintenance cost of central schools, which duplicate many of the affiliated activities of a community in special education, shows a tremendous per capita cost. This may be the basic reason for the lack of country-wide accommodations for special education of the handicapped. These statistics show that the cost of special education per capita ranges from:

\$370.36 to	\$125.00 for	crippled children
584.82 to	45.18 for	open-air classes
202.46 to	17.82 for	tuberculous children

A study of the school systems where the average or the lowest figures have been quoted in the report would help materially to reduce the maintenance cost and thus permit special education of the handicapped in practically all communities.

WHAT SHOULD BE DONE

In considering what should be done, careful thought should be given to all the influencing factors with which the children of lowered vitality should be surrounded so that they will be able to profit to the fullest extent by the instruction and training they are to receive.

There are: (a) general factors common to all groups; (b) special group factors which should also receive consideration.

General Factors

Early Discovery. The basic problem is to find the child early. The administrative procedure, therefore, should be vested in a definite organization, and through it, come in contact with practically every child of school age. Boards of education would be the most satisfactory as they have compulsory power. The procedure outlined, heretofore, uses all existing agencies of a community.

Association of Physically Handicapped Children. All physically handicapped children should be associated with children's clinics in various hospitals and dispensaries of the city or town, traveling medical unit in rural districts, or specialists or family physicians, so that all special education may be based upon the recommendations of the specialist or physician in charge of the treatment of the children.

This helpful cooperation of eminent specialists provides a very valuable advisory medical service without cost to the school system. The physicians of the board of health, bureaus of child hygiene and preventable diseases, render valuable assistance, particularly with tuberculous children and malnutrites.

Nursing Service. An efficient nursing service is essential and should collaborate with social service work. In New York City this is provided through various municipal, philanthropic, and social service organizations, as the Association for the Aid of Crippled Children, Visiting Nurse Association of Brooklyn, cardiac clinics for children, Board of Health, and social service nurses of various hospitals, health centers and other agencies, Bellevue-Yorkville Health Centers, and the Henry Street Settlement. Many of these organizations are officially affiliated with the Board of Education.

Thousands of dollars are spent annually for the service of nurses and social service workers for the handicapped by generous, public-spirited citizens, and in New York City the service is maintained without cost to the Board of Education. This indispensable service is the connecting link between the

hospital and the school, the school and the home, the home and the physician, and the physician and the school.

Education and Training. The child, having been selected, examined, and placed under treatment, is ready for school adjustment in the special classes best adapted to the recommendations of each child's physician.

In general, however, his education must be conducted in harmony with his physical condition and the prognosis carefully correlated to the school program.

Courses of Study. In planning the curriculum of special classes, stress should be placed upon a thorough elementary school education, providing the same courses of study as those for children in regular classes. It should lead to graduation and the privilege of attending general commercial or industrial high schools or classes of vocational training for undergraduates. Placement should finally be effected through the board of education, in cooperation with various public-spirited individuals and organizations associated with each handicapped group.

One must not lose sight of the fact that fortunately for the majority of physically handicapped children, the physical defects are cured or so remedied that the children are able eventually to attend regular classes with profit. Therefore, the courses of study should permit transition from the special to the regular class in an orderly and continuous manner, without a destructive break to retard the child.

Parallel with the academic courses, hand training should be planned for skillful use of tools, study of form, color, and construction, in grades from 1 A to 3 B; and in the upper grades, for instruction in the fundamentals of various industries, trades, and industrial arts. This will provide opportunity and expression for the hand-minded child and enable the teacher to study his ability for further occupational training later and for placement.

Extension of School Instruction. A continuous system of education should be maintained in order that wherever the child is found, his education may proceed without interruption. For this reason, New York City assigns teachers to

every hospital, convalescent home, and sanatorium, where handicapped children of New York City are found in reasonable numbers, and special instruction is provided as soon as the attending physicians approve. Bedside instruction is given and later, when the children are ambulatory, they attend school in classrooms in these institutions. Upon discharge the child is either provided with a home teacher if home-bound, or is sent to a special class or a regular class in accordance with his physical ability and the prognosis of his case.

Children who move from one school organization in a city or community to another should be reported on arrival to the board of education of the new community, and recommendations transmitted by one board to another so that each child may have continuous instruction adapted to his needs. In this manner, no child is lost through change of residence. Through this method of continuous instruction the problem of children being over-age is prevented and furthermore, they are not worried by the loss of a teacher, who to many of them is their greatest pleasure in life. In New York City, the age of graduation of handicapped children has been reduced from eighteen-nineteen years of age to that of the average normal child. Last year the youngest graduate in the city was a crippled boy, who started his education when a home-bound cripple at seven years of age through home instruction, entered the seventh year in a special class, and graduated at the age of twelve and one-half years. He is now attending a high school with normal children as one of a group of other physically handicapped children.

Teachers. The slogan of the educators of the handicapped should be: "An expert and technically-trained teacher for every physically handicapped child in the United States."

To accomplish this it should be the plan of all school administrators concerned in the education of children of lowered vitality to: (a) Arrange for temporary adjustment through trained teachers of regular classes pending expert examination; (b) Provide technically-trained, experienced teachers for classes of physically handicapped children; (c)

Provide home teachers and after-school home teachers for children in villages and rural districts and in isolated places, and for home-bound children in cities of all sizes, because the advent of the teacher is the open door of hope and opportunity.

The teacher is the basic factor in educating, training, and placement. In the final analysis, she must apply all the technical factors with which the child must be surrounded to make him ultimately an asset instead of a liability. Therefore, the teacher should be wherever the physically handicapped child is found, in hospitals, convalescent homes, private and public schools, or even in the child's own home, whether in large cities, towns, villages, or isolated places.

Supervision of Health Care. Trained personnel is essential for supervisory and administrative procedures, not only through directors who are both academically and technically-trained experts of handicapped children, but doctors who are health experts and understand school administration.

School transportation should be provided for selected cases.

Specialized physical activities adapted to the physical abilities of each child is necessary, both as a health measure and for recreation without hazardous results. Such children are seldom able to take part with pleasure and efficiency in the games of normal children.

Physiotherapy should be provided through various agencies officially affiliated with the board of education, and if necessary, in the school buildings. The board of education should grant permission, when necessary, to such agencies to conduct work which will benefit handicapped children, on school property and in school time. No cost would be incurred by the board and the school time chosen would be by mutual agreement of both parties concerned.

Hot lunches should be expertly planned and supervised, and also a mid-session pasteurized milk service, or orange juice, or bouillon. These should be provided at cost by mothers' clubs, parent-teacher associations, philanthropic

agencies, and school lunch committees, the deficit to be paid through these organizations or a school fund.

After studying the matter, it appears to be inadvisable to collect food or funds for lunches for the handicapped from other school children. This pauperizes. Therefore it is necessary to provide for this service through definite sources. The homes in which there is financial stress should be carefully investigated by visiting teachers or other social service workers and efforts made to improve conditions by aiding the wage earners to increase their earning capacity. These poor home conditions are often the cause of the child's physical disability. Malnourished and tuberculous children, and other cases of lowered vitality cannot long maintain the high standard gained by special education and health care if they are to return to the same conditions which produced, or influenced, their physical disability. Home health habits may thus be encouraged and practised.

In the congested parts of the cities, provision should be made for physically handicapped children to have a safe place in which to play under technical supervision, after school, near their homes, or in recreation centers in school playgrounds. This is necessary in order that the good which has been accomplished through special school care is not lost by injudicious and unsupervised activity after school which so often occurs through lack of play space and supervision.

Public Opinion. Methods of arousing public interest should be carefully studied through the use of every agency, society, organization, and influential citizen in the community. Where time, interest, sympathy, and money are given by public-spirited citizens, a cooperative attitude can be established towards the adjustment of handicapped children, fitting them for harmonious relationship with life regardless of their disability.

Training and Placement. The child must be placed after school training, whether mentally-minded or manually-minded, and with this end in view the following considerations should be studied:

Strive for less individual or personal placement in

order that country-wide interest in handicapped children may be established; obtain this wide interest through the aid of outstanding citizens in industries, arts, and professions; prepare workable plans for the absorption into these typical industries, occupations, and professions, of a definite percentage of physically handicapped children based upon their ability rather than upon sympathetic pity for their disability. This pauperizes the children.

Localized workshops should be organized for the handicapped who cannot stand the stress of occupations under normal conditions of competition in industrial plants. This should also include sheltered shops for the handicapped who, because of some associated mental disability or great physical handicap, cannot give a full day's work for a full day's pay and so must be subsidized, otherwise expensive institutional care must be provided.

There should be organization of work for the home-bound handicapped after training through home teachers; also the return of this work to the employer through the administration of such sheltered shops and special workshops for the handicapped, in order to prevent profiteering.

In this way physically handicapped children may develop into self-supporting, independent, happy, useful citizens, without the dread of becoming city or state dependents hanging over them like a cloud, compelling them to leave home surroundings and sympathy for the impersonal care of an institution.

Special Group Factors

There are also special factors which influence particular types of cases.

Tuberculous Children. The type of classroom must be considered as an aid in the health care of tuberculous children and as a means of facilitating school adjustment in the

campaign which is being waged against tuberculosis. This prophylactic care in school adjustment may be classified under several heads:

Day camps for all-day health and school care, located in cities and towns, upon ferry boats, boat schools, on piers, in parks, and on the roofs of clinics or other buildings. These camps are intended for children with childhood type of tuberculosis, and seriously under-nourished children, who are tuberculin reactors, where they may have health care while pursuing their studies and also expert after-school supervision and recreation. The children return to their homes before sunset. The nurses affiliated with these camps visit the homes and instruct the parents in the health care of the children.

Outdoor classes in municipal or state sanatoria for similar treatment where children are in these institutions for an indefinite period. This care is for cases of adult tuberculosis type and particularly for children where there are no facilities at home or little home cooperation for their health care.

Outdoor classes in hospitals for active cases of adult type of tuberculosis who are hospitalized.

The *classrooms* are outdoor rooms, open on all sides to the air and sunshine, but with a protective roof, "corex" glass windshields which will transmit sunlight are also installed for use in stormy weather as a protection against draughts. These classrooms have direct ventilation, the temperature of outdoor air. In connection with such rooms there is a warm lunch room, kitchen, and rooms for medical examination.

The classroom equipment consists of cots, scales, and movable adjustable desk chairs which can be placed to one side to make room for the rest period or for play during stormy weather.

The personal equipment consists of an eskimo suit having a coat with hood and mittens attached, bloomers, leg-

gings, and woolen overshoes (New York City model), and either blankets or sleeping bags for additional covering during the rest period.

A rest period after the noon lunch for one hour is needed, and for some children it should be provided twice a day. The maximum register should not exceed twenty.

Health program. Children are examined frequently, their temperatures being taken daily before the mid-day lunch and the school program adjusted accordingly. The children with a temperature of 99° or above are not permitted to take part in school work, but have rest periods upon cots or are sent home with the nurse or social worker, if in a day camp. In hospitals they are placed in bed.

A health instruction program similar to that of open-air classes is conducted to enable the children to form good personal and home health habits. A safe, economical, and easily accessible milk supply should be provided, and only pasteurized milk used.

Children discharged from hospitals and sanatoria are transferred from the outdoor classes to those in the day camps or to open-air classes in order that their health care may be continued.

Open-Air Classes for Malnourished Children and Tuberculous Reactors. There should be at least one open-air class in every public school. In large cities it would be advisable to have an open-air classroom for every grade in every school district as a prophylactic measure, in view of recent studies on tuberculosis in school children. The maximum register of twenty would not be difficult to maintain due to the number of cases of lowered vitality.

The special classroom should be located not higher than the third floor, to prevent excessive stair climbing for these children of lowered vitality. It should be near an exit, and a corner room, preferably either southeast or southwest for maximum light, sunshine, and cross ventilation. A mean temperature of 45° F. should be maintained during the period of artificial heating of the school building.

"Corex" glass windows should be used, composed of

pivoted horizontal sections for direct transmission of sunlight instead of through the window glass.

The classroom equipment should consist of adjustable movable desk chairs, cots for rest period, scales for height and weight tests.

The personal equipment consists of an Eskimo suit which does not immobilize the child like the sleeping bag, is easily cleaned, does not come in contact with the floor, and is not hazardous in fire drills.

The health program should include:

Treatment and cure of all physical defects found upon examination so that the child is free to gain and eventually attain normal health;

A definite program of health instruction through various devices, such as weekly health posters, correlated with a health slogan to illustrate definite health habits; children's health books, mothers' clubs, children's health clubs, and monthly meetings of these clubs in order to show definitely to the child and the parent the physical improvement of each child and the means of obtaining and maintaining it;

Daily morning hygienic inspection, annual health day;

Health plays, moving pictures and talking pictures upon health subjects for mothers' meetings. Lunches should be served at the meetings to show good foods and method of preparation and as practical aids in establishing ultimately good health and food habits.

Through this program the children not only practice good health habits, but understand the procedure of maintaining their health after they leave the open-air class.

Open-window classes are established for the lesser grades of malnourished children to prevent their becoming the more serious cases grouped in the open-air classes. Open-window classes can be operated at a much lower cost than open-air classes. Regular classrooms are utilized.

The maximum register should not exceed thirty-five pupils in two consecutive grades of one school year.

Direct ventilation through open windows with a mean temperature of 55° F. is recommended.

The row of seats next to the radiators, and every alternate row of seats, is removed to provide more space for physical activities and other health work and to prevent overheating of the children near the radiators or exposure to draughts from open windows.

The personal equipment, provided by the parents, consists of warm underwear and school clothing, coats, mittens, sweaters, leggings, and caps. In cases of financial stress, equipment should be provided through philanthropic agencies.

A modified health program includes treatment and cure of all physical defects similar to that of the open-air classes; also the morning milk service, using pasteurized milk. No sleeping period is required.

In connection with these classes, nutrition classes are conducted with the aid of the school nurse and the class teacher. In some cities the nutrition classes are conducted, with successful results, without the open window organization, for minor grades of malnutrition as in Philadelphia.¹

Cardiopathic Classes. This is the last group of physically handicapped children to receive school care in special classes, although study and research have shown that their need is as great as that of tuberculous children. For years, because theirs was not a visible handicap, children with weak hearts became submerged in that great army of school children with whom they were trying to keep pace with unequal physical ability and unsuccessful results. This led to frequent breakdowns and haphazard school attendance, often, in fact, with school absences of several months or even years. Consequently, the children became over-age for their grades and far behind in school progress, discouraging both to the child and parent and a great expense to the school system.

¹ Goldberger, J. H., Smith, Adela J., and Cohen, Francis. "Open-air Classes." Dec. 22, 1917. *Journal American Medical Association*.

Special classes for children with weak hearts should be formed. In cities where such classes have been in operation, satisfactory results have been obtained not only from the point of view of school progress but also economy. It is one of the most economical methods of special education operated for the school adjustment of cardiopathic children, due to the fact that the children receive continuous schooling.¹

Classrooms for these children should be located on the ground floor, or not higher than the second floor, near a fire exit. A corner room should be chosen for cross ventilation, preferably south-east or south-west to provide maximum sunshine. Ventilation should be direct and temperature that of the regular classroom. The classroom is equipped with movable and adjustable desk chairs, and reclining chairs for rest periods.

The personal equipment consists of blankets for use during the rest period.

A well established health program should be put into operation, consisting of:

A daily temperature test of the children upon arrival at school as a basis of school activity. Children with temperatures of 99° or over are not allowed to take part in school work but have rest periods in reclining chairs or are sent home with the nurse. The nurse eventually notifies the parent when the child is physically able to return to school.

The treatment and cure of physical defects by the attending physician of each child in order to remove all foci of infection and thereby lessen the tendency to a recurrence of cardiac disability.

A daily rest period of forty minutes or over after the noon lunch.

The provision of after-school recreation periods in order that the children may be under constant supervision and thus prevent injudicious exercise which may undo all the good results of medical care and the conva-

¹ New York City. Public Schools Special Report, Cardiac Classes, 1923.

lescent program in special classes. These classes are a provision for the adjustment of the cardiopathic child while he is recovering from cardiac disability. They enable him to improve his condition gradually and at the same time receive his education, thus preventing any destructive break in his schooling pending his adjustment in a regular class.

Classes of cardiopathic cases in convalescent homes should be provided for children who cannot have suitable supervision in their own homes. This would improve their physical condition to such an extent that they could be returned to the class of cardiopathic children near their homes or even to a regular class.¹

A workable card system should be arranged for the designation of all cardiopathic children in regular classes, by placing a red star upon their medical and pupil's record cards. This would direct attention to the need for school adjustment in such classes, but would allow also for special care in cardiopathic classes, if necessary, before serious damage is done.

The heart classification of these children should be in accordance with the procedure of the American Heart Association, obtained either through the family physician or a cardiac clinic for children established under the regulations of this Association.² The special school adjustment, also the transfer to a regular class and subsequent care, should be based upon this classification in accordance with the recommendation of the physician in charge of the treatment of each child.

Epileptics. A definite school program should be outlined for this group of physically handicapped children of school age.

The school problem in regard to the school adjustment of epileptics has been given due consideration after discus-

¹ New York City, Board of Education. Twenty-third Report of Supt. of Schools, 1920-1921. Annual Report, Special Classes, 1929-1930.

² American Heart Association. "Requirements for an Ideal Cardiac Clinic . . ." Feb., 1927.

sion with physicians, pediatricists, and neurologists of the Committee on Medical Care of Children. They are quite agreed that the conditions in true cases of encephalitis and epilepsy cannot be handled in school. These physicians have stated that there are many pseudo forms of both of these clinical diseases, many of which are often spontaneously terminated without treatment, as a result of either growth or development, or through self-limitation of the causative agent. Dr. Stecher states that epilepsy and mental deficiency are often associated. It must be kept in mind, however, that this association is not as common as is generally believed, due probably to the fact that statistics are mainly compiled from institutional cases. New York City records show that less than 6 per cent of epileptic children now in school or under home instruction are mentally deficient. These records indicate the need for further study and research in planning procedures for the special instruction of epileptics. Much might be done to ameliorate the conditions of the children and to relieve the anxiety of parents. A word of warning, however, should be carefully inserted in all reports and recommendations concerning epileptics of school age and their attendance in regular classes, because of danger which may result to themselves and others, due to seizures which arise with little or no warning.

From reports transmitted from the average cities, little work is done for these unfortunate children. Provision should be made for their education and training, and eventually, for some interesting occupation. Only after careful trial and observation should they be institutionalized. For several years in the City of New York, an experimental study has been made of children who are epileptics, in accordance with the following procedure:

When a child has had a seizure in school it is considered advisable to suspend him for a while for his own safety as serious accidents may arise, not only to himself but to others. School cases are reported by principals to the district superintendents and through them to the Division of Physically Handicapped Chil-

dren. Interviews are arranged for parents and the child is inspected, and at the same time a complete school record is obtained. His school attendance record is reviewed, at the time of the inspection, to ascertain his school attainments and the child is referred for a psychological examination. Whenever possible placement in a hospital is arranged for a time under the observation of a neurologist and psychiatrist. Clinics for epileptics are available in various hospitals in the City of New York. While in the hospital, school instruction is provided, based upon the psychological examination. If parents are unable to keep the child under continuous medical care, this is obtained in one of the clinics for epileptics.

School adjustment is made only after the psychological report and recommendations of the psychiatrists and neurologists or family physician have been obtained. This is provided in several ways:

Through a teacher in the hospital where the child may be under observation and treatment;

Through the assignment of a home teacher. Records are kept of the number of subsequent attacks, duration and frequency, and of his physical condition and school progress.

Through a return to school on trial if the child is free from seizures for a year. If he has subsequent attacks in school he is again suspended from school and placed under home instruction until his physical condition improves.

The children referred for institutional care are those whose psychological examination and school test show definite mental deterioration, especially if they live in a family where there is little home care or control. This also applies to the epileptic child when the recommendation of the psychiatrist and neurologist indicates that he

cannot profit by any types of instruction which can be provided through the public schools or his home.

Provision for institutional care is effected through interviews with the parents after which the children are referred to the admitting bureau of the Department of Public Welfare.

If the children are of low mentality (below 75 I. Q.), they may be admitted to an ungraded class or to a low I. Q. class if free from seizures for a term or more, from which they may be definitely suspended if there are recurrences.

This method of care has the definite advantages of individual study and selectivity, rather than the mass segregation of all epileptics under the common statement, and generally accepted belief, that epileptics are definitely mentally deficient. These procedures are not only comforting to the parents but definitely give an opportunity to study each child and to adjust him upon his own ability. Satisfactory results have been obtained in the City of New York and a large percentage of selected cases are graduated from the elementary grades, under home instruction.

Encephalitis Lethargica. While the country-wide statistics on these cases are scarce, nevertheless they exist in sufficient numbers to constitute a school problem. In the City of New York, Chicago, Philadelphia and Detroit an increasing number of convalescent cases of encephalitis lethargica of school age has been noted. The demand of parents for provision for special education for these unfortunate children has had to be met, and for this reason an experimental study of school adjustment is under progress.¹ Dr. Strecker states:

Acute epidemic encephalitis may be said to compete with neurosyphilis in the variety of its clinical forms and sequelae. Depressions, hysterical syndromes of various descriptions and mental deficiencies have also been noted as sequelae of this disease. The post encephalitis behavior disorders in children are of the greatest im-

¹ Buffalo Schools, Report, 1929-1930. Chicago Public Schools, Report, 1929-1930. New York City Public Schools, Annual Report, 1929-1930.

portance in their relation to serious delinquency. Children previously well adjusted often show a total change in character and disposition after an attack of this disease. There is marked emotional lability and hyperkinesis often uncontrollable, associated with sexual precocity. These children are unable to get along in school and indicate the need of special consideration and study. Such children do not respond to discipline, and commitment seems to us unjustifiable. At present these manifestations of epidemic encephalitis in children present an imperative and involved community problem.

The picture outlined by Dr. Strecker in regard to these cases is discouraging and disheartening to the parent and child alike. It seems advisable to offer a word of warning before classifying these cases as a group. Here, as with epileptics, each case should be considered upon its own individual merits and residual abilities as these cases are increasing in frequency. Since the mortality rate is lower, they have become an ever increasing problem for school adjustment.

A careful study of such children was made several years ago through the Board of Education of the City of New York. The increase in cases has shown the advisability of adjustment of each individual case. This has been done primarily upon the plea of the parents.

A similar procedure is followed to that for epileptics in regard to school attendance, psychological examinations, and placement under the expert observation of psychiatrists and neurologists, to ascertain the residual abilities which may be utilized in school adjustment. Upon the basis of all of these reports the school adjustment is made through:

Placement in open-air classes or ungraded classes;
Assignment of home teacher if there be an associated
crippling or cardiac disability.

If physically able to attend school in a class of physically handicapped children, a modified curriculum is provided, including rest periods, modified activity programs. Cases with an I. Q. of 75-50 can be placed with profit in an ungraded class. Those who continue to show sequelae which cannot be adjusted through the school have been placed in

outdoor occupations. Since commitment is inadvisable these children, through relatives, parents, and philanthropic agencies have been placed with families who live on farms, and have been occupied in chicken raising and other outdoor occupations such as farming, flower raising, with beneficial results. All of these cases are successful and happy and this adjustment has been a comfort to the parents.

Perhaps there is no greater distress to be observed than that of the parents of children of lowered vitality who have been told by various authorities, both medical and educational, that there is nothing that can be done for their children. It is reasonable to believe that with the care outlined by experts on special education, much constructive work can be accomplished, and that every type of physically handicapped child, even with a certain amount of mental deterioration, will profit by it. In the final analysis, the training and education of such children is an outlet for a certain amount of residual ability which, however slight, should be utilized, whether in contact with the world's work in sheltered shops, subsidized shops, or in institutions.

RURAL METHOD

The rural plan can be efficiently operated through the county unit plan, which could be practically applied for the treatment, special education, training, and placement of children of lowered vitality as it has been for crippled children.¹

In school districts, therefore, in which there are not enough children for organizing special classes, the same health procedure as followed in large cities should be put into operation by the educators of rural districts.

Malnourished and tuberculous children could be placed on porches or in "corex" glass enclosed cubicles, in connection with ordinary classrooms, where a lowered temperature may be maintained. Rest periods could be observed and the mid-morning and afternoon service of pasteurized milk,

¹ Endren, J. J. *Report of Broome County Unit Plan, 1929-1930.*

brought by the child from home, could be instituted. These children could still take part in the instruction of the normal group, and the health program which is conducted in an open-air class could be given to the whole class with profit. In fair weather the children could have rest periods out of doors. Although children in rural districts are surrounded by better conditions for health care, it does not always produce superior physical reactions, due to lack of instruction or its application.

Children with weak hearts should have a carefully modified activity program and provision for daily rest periods in school. In cases where children are too ill to attend school, but are able to study at home, home teachers should be provided through the transportation unit of the district, or their class teacher could be assigned to visit the home after school hours, or one of the home teachers of a traveling unit of teachers similar to the traveling medical unit.

Every case examined by the medical unit should be followed by the assignment of a home teacher or adjusted through the county unit program. Epileptics and encephalitis cases are doubtful school cases in rural districts and may receive home instruction in accordance with the New York City plan.

METHOD OF SCHOOL CARE AND FOLLOW-UP

The follow-up service is a very essential part of the education and training of physically handicapped children in order to estimate the success of the administrative procedures employed. During school age this may be economically and rightfully conducted through the board of education, but a definite follow-up system through interested organizations is necessary at stated intervals thereafter for advice and encouragement to the worker and for advisory purposes in adjusting school programs to new conditions existing in industry.

It is in this respect that the training of the public in the interests of the handicapped can be utilized in forming an

advisory group to which all physically handicapped cases may return for sympathetic and constructive adjustment and encouragement and for other needs. This organization would entail no further expense to the community and would be of great economic value.

MINIMUM REQUIREMENTS

Since extensive service for a country-wide program for the education and training of handicapped children may imply complex and expert requirements, care should be taken to emphasize economical methods of the simplest and most workable form, consistent with efficiency. This will make it possible for the extension of service to every physically handicapped child in the United States.

The general tendency is to provide costly central school buildings with high maintenance expenditures in large cities or communities, where such care has been started. Education and training, therefore, can be given only to a fortunate few of the children needing special services. Under the New York City method it has been possible to extend a city-wide service to all types of the handicapped child due to the low per capita cost, and to provide expert and technically-trained class teachers and home teachers for special education and industrial training.

HOW TO ACHIEVE DESIRED RESULTS

In reviewing what is now being done and considering it in connection with what should be done, it is apparent that in order to provide education and training for all types of physically handicapped children in the United States, whether in large cities, towns, villages, rural districts, or in isolated places, an economical and practical administrative method of how to do it must be formulated.

The outstanding work, experimental studies, and research concerning children of lowered vitality which are now being conducted so successfully in many parts of the United States could serve as models for communities where care

for these handicapped children is, as yet, a new undertaking. The experts engaged in this work throughout the country should be available as an advisory group to consult with superintendents of schools, boards of education, philanthropic organizations, parent-teacher associations, medical groups, and all who are interested or who come in contact with handicapped children. Time and money could be utilized advantageously by directing interest and sympathy in constructive channels. Much good work could be accomplished through moving pictures, talking pictures, and radio talks.

It may be advisable to form an advisory commission which would be available for conference upon state or federal invitation; to be utilized, when necessary, to advise school superintendents and boards of education and others interested in establishing school programs for the handicapped. Many of them have difficult tasks ahead of them at the present time. They want to be advised upon methods and costs. Often facilities for special education are not approved, due to the dread of high expenditures and criticism, and because expert advice was not available. Through this expert advice, a practical and economical standard could be established which could be utilized by officials of cities, towns, and states to compare the efficiency of their own programs for the handicapped.

The duty of this commission should be to stress economy. The lower the cost consistent with practical results, the more widespread the service. It should be possible to extend medical, surgical, and nursing service, health care, education, training, and placement, and subsequent follow-up to every physically handicapped child under the protection of the American flag. All this service would be provided in a school atmosphere of sympathetic guidance and help which would serve to create self-esteem and self-confidence as a basis of character building. Children and parents alike would appreciate the helpful and sympathetic interest of boards of education in providing this special school and health care. Probably no school budget would carry more cheer and

happiness than that spent by boards of education throughout the United States for the handicapped children in helping them to help themselves to become happy, useful, self-supporting citizens able to take part in the world's work. Thus, may the United States make assets of its liabilities.

RECOMMENDATIONS

1. *Special Classes.* Organization of special classes in every school system where ten or more children of lowered vitality are found. (Maximum register twenty.)

Simplified, academic curriculum adapted to the physical condition and the prognosis of each child based upon the recommendations of attending physicians. This will lead to graduation and the privilege of attending general, commercial, or industrial high schools, or industrial classes for undergraduates.

Special attention devoted to strength-gaining, rest, proper diet, an adapted activity program, instruction in practical personal and home health care with expert supervision of after-school recreative activities.

Special personal and classroom equipment.

Definite procedure for the placement of cured cases in regular classes as soon as each child is physically able to profit thereby. In connection with this placement, a method of careful follow-up to enable the child to maintain his improved health condition.

2. *Type of Segregation.* The location of special classes in specially constructed units in public school buildings has the following advantages:

Localizes accommodations near the homes of the children, reduces the cost of transportation, and eliminates long tedious transportation.

Socializes the children by association with normal children, an important factor in their adjustment later. It is a more humane method of segregation.

Educates the public, and the children also, to think of the handicapped in terms of their ability rather than their disability.

Entails economical administration as the services of the same principals and supervisors can be utilized and also other regular school facilities.

Economy of construction.

Cost of construction same as that for normal children.

Eliminates tremendous cost of central schools.

Prevents duplication of other facilities by permitting the use of existing agencies of a community.

If the school population changes, these classroom units can be used for normal children and units for the handicapped can be placed in other school buildings at little cost.

The unit can be added to new buildings or attached to old schools. It is practical, therefore, for rural and city schools.

This economical cost of construction and maintenance releases money for salaries for expert supervisors and technically-trained teachers. More children can be accommodated. Its economy is appealing because it would encourage more widespread accommodations for special education.

3. *Budgetary Allowance for Special Education.* This should be for educational purposes only. Existing community organizations should be used for all other services needed. No service should be duplicated in the schools which can be obtained otherwise. Among the advantages are:

Economy.

Educates public opinion by arousing widespread interest in the handicapped.

Public-spirited citizens and organizations give time, money, and sympathy for nursing, medical, surgical and dental care, summer vacations, and follow-up.

This interest aids in the placement of the children later.

Constitutes through this interest a logical, economical and practical follow-up system in connection with the placement of the children through the school.

When handicapped children change their residence in a community or are transferred to regular classes they still

can avail themselves of special services which necessarily cease when they leave a central school organization.

Methods outlined under 2 and 3 can be applied to cities of all sizes, to small towns and rural districts.

4. *Teachers.* Slogan, "An expert and technically-trained teacher for every handicapped child in the United States."

The advent of the teacher opens the door of hope and opportunity. In the final analysis, the teacher must apply all technical factors with which the child must be surrounded to make him ultimately an asset instead of a liability.

Teachers should be sent wherever handicapped children are found: in hospitals, convalescent homes, private and public schools, in their own homes, whether in cities, towns, villages, or isolated places, for continuity of education and training to prevent school retardation.

Home teachers and after-school home teachers should be provided where there are less than ten handicapped children needing instruction.

Teachers should accompany traveling medical unit in rural districts so that case adjustment is complete and in harmony with the treatment recommended by the physician.

Type and place of teacher training is recommended for study and research.

General training for regular class teacher;

Special training for teachers of rural districts and small towns for all types of cases;

Special training for teachers of special classes of one type of case in large cities.

Training and Placement

Special courses for motor-minded children.

Less individual placement.

Obtain wide interest of outstanding citizens in industry through constructive methods of education and segregation.

Prepare workable plans for the absorption of a definite percentage of physically handicapped in industry and municipal and federal civil service.

Organize localized work shops for those who cannot stand the stress and competition of occupation under normal conditions.

Organize subsidized sheltered shops for those who cannot physically do a full day's work but need a full day's pay.

Affiliate these shops with the home-bound to provide work for them and to return work to the employer at a living wage.

5. *Methods of Early Discovery of Cases.* Administrative procedure should be vested in a definite organization, preferably boards of education, as early finding is basic.

Use every agency that comes in contact with these children: boards of health; other municipal divisions; baby health centers; preschool clinics; hospitals, clinics, convalescent homes upon admission and discharge of patients; bureaus of attendance; social service workers; philanthropic agencies.

Through school principals, by means of daily morning inspection by class teacher of regular classes.

Annual Health Day. Inspection of all school children by class teacher and nurse and reviewed by school medical inspector and director of health education, and special teachers of health education.

Health certificates of all new entrants to school.

Thirteen year health examination by medical inspectors in preparation for working papers or high school.

Each case is reported to a designated official of the board of education, with medical record of findings. Treatment is established if necessary.

Transfer of known cases upon change of residence from one city to another by notifying boards of education.

6. *Rehabilitation.* Each child when found to be associated with a clinic, hospital, or family physician.

Service of visiting nurse, or social service worker to be established as connecting link between hospital, school, physician and home.

7. *Tuberculous Children.* Day camps for all day health and special school care, located near homes of children, on ferry boats, in parks, on piers, on roofs of clinics for all cases of childhood tuberculosis.

Outdoor classes for children in all sanatoria.

Outdoor classes for hospitalized cases of adult type of tuberculosis.

Organization of health centers country wide for the examination of tuberculin reactors under the regulations outlined by the Bellevue-Yorkville Health Demonstration, New York City.

8. *Malnourished Children.* Essential for open-air treatment to be provided through open-air or open-window classes including rest, good food and medical and health care.

At least one open-air class in every school in the United States. In rural districts, one open-air cubicle.

In large cities, one open-air class for every school year in every school district.

Open-window classes for lesser grades of malnourished children in connection with the nutrition class in every school.

9. *Cardiopathic Children.* The classification of these children in accordance with procedure of American Heart Association either through the family physician or cardiac clinics for children.

Workable card system for the designation of all cardiopathic children in regular classes in the schools, through a red star placed upon the medical and pupil's record cards for the adjustment of the school activity program in regular classes.

Organization of classes of cardiopathic children in each school system for Class II A and II B cases; and as a prophylactic measure for such Class I cases who are under observation to determine their suitable school adjustment; all based upon the recommendation of the physician in charge of the treatment of each child and similarly advised.

Home teachers for Class II B borderline cases and for Class III chair cases. No instruction for Class III bed cases.

After-school care and recreation centers for cardiopathic children for protection and health care.

Convalescent homes for children without home conditions for such care.

Organization of cardiac clinics, country-wide, under the regulations outlined by the American Heart Association.

10. *Encephalitis Lethargica Cases.* Since these cases do not respond to discipline, commitment is not justifiable; individual instruction through home teachers and provision for placement in outdoor occupations—farming, chicken raising, and so forth.

Further study and research be made so that the psychiatrists and neurologists, through the study of these problem cases and also of epileptics, may guide school authorities in the school adjustment of these neglected children.

11. *Epileptics—Special Classes.* In hospital while under observation for mental capacity and physical ability to do school work.

Classification to determine the needs of the child as a basis for school adjustment upon discharge from hospital.

Special school adjustment to be based upon the associated care of the physician in charge of the treatment of each case.

Home teachers for all epileptics who are able to profit by school instruction.

Trained teachers in all institutions for epileptics.

12. *Milk.* The need of a clean, wholesome, cheap, convenient, and adequate food, preferably supplied through pasteurized milk, butter, and cream, for every tuberculous and every malnourished child.

13. *Rural Districts and Isolated Cases.* The use of the county unit plan (Broome County, N. Y.) for rural districts.

Home teachers and after-school home teachers for isolated cases through a traveling unit of home teachers.

14. *Public Interest.* Methods of arousing public interest should be carefully studied:

By press articles, radio talks, moving pictures, through local agencies, organizations, and influential citizens. These methods are recommended for study and organization.

Organization of an advisory commission, members of which would be available for conferences upon state or federal invitation and to consult with school superintendents and boards of education.

APPENDIX

TUBERCULOUS CHILDREN

Summary Report of Dr. P. C. McCain, North Carolina

Forty thousand children in North Carolina were given the Mantoux test (Intradermal tuberculin test)—all positive reactions were examined by means of X-Ray pictures—included 39,494 children (34,238 white—5,256 colored). White children showed 21.1 per cent positive tuberculin reaction—colored children 21.9 per cent. This is a very much lower proportion for both races than is found in more thickly populated communities. Physical examinations, and double X-Ray pictures were made of 8,377 positive tuberculin reactors—643 were classified as having tuberculosis, practically 8 out of 100 children showed a positive tuberculin reaction, and 3 out of every 200 school children were diagnosed as having tuberculosis, while both races gave practically the same percentage of positive tuberculin reactors, *almost twice as many colored children who had positive tests were found to have tuberculosis*. Practically all the children who were found to have tuberculosis had the childhood type of the disease, in which it is almost entirely limited to the glands of the root of the lung. Only 40 were found to have tuberculosis of the adult type, in which the lung tissue itself is diseased.

Bellevue-Yorkville Health Demonstration New York City

A special study is now being made of school children in New York City, in the Bellevue-Yorkville District, in order to discover what proportion of these are tuberculous as shown by physical examinations and X-Ray pictures. This method of finding tuberculous children is practical in cities and towns and villages.

Death Rate in Seventeen Largest Cities

The death rate in seventeen largest cities ranges from 73 to 170 per 100,000. The median average rate for 1927-28-29 being 87, which is the rate also of New York City. In all cities having a higher rate than this there are large Negro populations or the cities attract

large number of tuberculous, because of climate conditions, such as Los Angeles, average 103, Baltimore 113, New Orleans 170, Cincinnati 126. *Weekly Bulletin*, May 18, 1930. Board of Health, New York City.

Mortality

Since 1920 in New York City, the greatest decline in the tuberculous death rate has occurred among children with a reduction of forty-five per cent among those of 15 years of age. Among young women 15 to 20 years old the rate has fallen 29 per cent. Among boys, the greatest reduction, 57 per cent during the period of 1920-1928, occurred at the age of 5 to 10 years. *Weekly Bulletin*, Board of Health, May 30, 1930, New York City.

CARDIOPATHIC AND CIRCULATORY DISTURBANCES

Classification of Patients Attending a Cardiac Clinic

Organic Heart Disease

- Class I** Patients with *organic disease*, but able to carry on ordinary physical activity.
- Class II** Patients with *organic disease* but unable to carry on ordinary physical activity. (Cardiac Insufficiency.)
- Activity slightly limited.
 - Activity greatly limited.
- Class III** Patients with *organic disease* but unable to carry on any physical activity, i.e., who must remain in bed or in a chair. (Cardiac Insufficiency.)

Possible and Potential Heart Disease

- Class E** Patients with *possible heart disease*. Patients with abnormal signs or symptoms, not believed to be due to organic heart disease.
- Class F** Patients with *potential heart disease*. Patients without circulatory disease whom it is advisable to follow because of the presence of history of an etiological factor which might cause disease.

Adopted and Distributed by American Heart Association, Inc., 450 Seventh Avenue, New York City.

Cardiopathic Children—Statistics Heart Disease in Children of School Age

A. In the City of New York

N. Y. C.
School
Children

1. Among *girls* of school age—
Heart disease is the first cause of death.
Among *boys* of school age—
Heart disease is second cause of death, the first cause being accidents.

In Adults
N. Y. C.

2. Among adolescents (girls and young men) 15–19 years of age—
Heart disease is the second leading cause of death.
3. Among adults—25 to 44 years of age
Heart disease is second cause of death of women and third cause of death of men after tuberculosis and accidents.
After 45 years of age heart disease is the leading cause of death.

B. In the United States Registration Area

School
Children in
Other Cities

1. Heart disease is *only fourth* as the leading cause of death among school children—boys or girls.

Adults
Other Cities

2. Among adults 25 to 44 years of age in both men and women, heart disease rate is lower than in New York City.

In considering these comparative statistics, attention is arrested by the unfavorable record of the City of New York. It is reasonable to conclude that

1. Certain adverse conditions in the city life of New York school children aggravate existing cardiac conditions.
2. Causes death earlier in certain cases.
3. The outstanding health problem is heart disease.

4. Special school care for all school children with weak hearts immediately when the condition is discovered would no doubt lower the mortality and morbidity. Sir Arthur Newsholme says "That a high proportion of the total deaths due to cardiac disease are preventable."

EPILEPTICS

Dr. Spratling found that of epileptic children now in school or under home instruction the disease had its onset before the age of ten years, 38½ per cent, between the ages of ten and twenty years—43 per cent, and twenty to twenty-nine years of age—9 per cent. Gower states that 76 per cent develop symptoms before the age of twenty years, i.e., school age.

Drs. Jelliffe and White in 1917 give excellent clinical classifications and use the term in the plural "epilepsies."

Cases of true epilepsy, are chronic and progressive. In children the outlook is better and occasionally epilepsy may cease at puberty. Terminal pncumania is many times very common.

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MENTALLY RETARDED CHILDREN

MENTALLY RETARDED CHILDREN

STATE LAWS

THE problem with this subject is first to find the mentally retarded children and segregate them in special classes before they have become completely discouraged through repeated failure and second, to provide the type of training that will prepare them to engage successfully in unskilled or semi-skilled occupations.

It is generally conceded that at least 2 per cent, or 450,000 of the pupils enrolled in the elementary grades are mentally retarded to such a degree that they require special education to make the most of their possibilities and the realization that society will have to bear a heavy burden of misery, dependency, inefficiency and crime because of the failure of the schools to provide efficient instruction for mentally handicapped children and that without state legislation most schools will make inadequate provision, or none at all, for such children, has led to the statutory development of state programs for the education of both mentally and physically handicapped children.

Fifteen States have enacted special laws designed to promote school education of handicapped children, namely:

Alabama, 1927; California, 1921; Connecticut, 1921; Louisiana, 1922; Massachusetts, 1919; Minnesota, 1915; Illinois, 1917; New Jersey, 1911; New York, 1917; Oregon, 1927; Missouri, 1919; Pennsylvania, 1919; Utah, 1921; Wisconsin, 1917; and Wyoming, 1919.

Some states encourage the establishment of special classes for defectives by state bounties while others, namely: Connecticut (on petition of the parents of ten or more children), Massachusetts, New Jersey, New York and Pennsylvania have made such establishment mandatory. It is also

compulsory in Alabama in cities of over 5,000, in Utah in cities of the first class and in Wyoming.¹ However, no state has yet succeeded in formulating an adequate program for the education of these children in both urban and rural communities.

In New Jersey for example, although the school laws require adequate provision for handicapped children in the public schools, it is evident that the state has not set up adequate machinery for rendering these provisions effective in practice. There is no state supervision of special education, no machinery for such supervision, and although special education is a technical phase of education in general, the state school system has no technical experts engaged in this phase of education. It is, therefore, not surprising that the method of selecting the children for the special classes has not been outlined by the State Department of Education, that boards of education fail to discover the children who are three years or more below normal, that local school districts make no provision, or at best insufficient provision, for the subnormal children, that the medical inspection of such classes required by law does not exist, and that suitable equipment, courses of study and the like, are not generally provided. Even where machinery has been provided locally for carrying out these provisions of the law there is lack of standardization, marked confusion of method and purpose, and inadequacy of provision in relation to the size of the problem.²

Systems of state subsidy for the support of classes for mentally handicapped children are maintained by the following nine States: Louisiana, Minnesota, Missouri, New Jersey, New York, Pennsylvania, Washington (in cities of the first class), Wisconsin and Wyoming.

From the utter lack of uniformity between the laws of the various states it would seem that the systems of special

¹ Wallin, J. E. W. *Mentally Maladjusted School Children*. A survey undertaken for the Department of Education of the State of Ohio, 1928-1929. Unpublished. pp. 5-6. p. 18.

² Doll, A. *New Jersey State Educational Survey*. p. 22.

class subsidies have developed in a haphazard manner, obviously in response to appeals to legislative bodies from individuals and organizations whose interests have been narrowly limited to certain types of unfortunates. Some provide state aid only for the mentally handicapped, others only for certain types of physically handicapped; some give more generous support for the physically handicapped, others for the mentally handicapped, while a few (notably Missouri, Minnesota, New Jersey, Pennsylvania and Wisconsin) have attempted to provide more or less impartially and equitably for all types of handicapped children. Apparently little attempt has been made to establish systems of special class subsidies on scientific principles.

Regarding the classes for the mentally handicapped, Missouri, New Jersey, New York and Pennsylvania pay a part of the teachers' salary, while Minnesota and Wisconsin contribute specified amounts for each pupil. Missouri contributes \$300 for each teacher, New Jersey pays \$500 toward the teachers' salary, New York 50 per cent up to a maximum of \$1000, and Pennsylvania 25 per cent of the minimum salary in the first class districts and 30 per cent of the minimum in the second, third and fourth class districts, in addition to the regular appropriations for teachers' salaries. Wisconsin defrays all costs up to a maximum of \$100 in excess of \$70 per child, subject to pro rata reduction within the amount of the appropriation, while Minnesota grants \$100 per child in full attendance throughout the year.¹

The foregoing seems to justify the conclusion that little consideration has been given to the drafting of the laws to the underlying educational and economic principles which should guide such legislation.

¹ Wallin, J. E. *op. cit.* pp. 21-22.

THE NATURE AND EXTENT OF EDUCATION

In States.¹

Legal provision was found in 14 states, none in 30 states and no report was received from 4 states. Of the 30 states, 22 reporting no legal provision supply education for retarded children and 8 have no provision.

The 4 states not reporting have no provision of any kind.

The District of Columbia and Hawaii have no legal provision but supply education for their retarded children.

In Cities of Over 10,000 Population

Each of the forty-eight states exempts a child from school attendance if he is mentally handicapped. Only recently have the schools attempted to provide a curriculum that would meet the needs of this large group of children.²

The Extent of Organization

In order to secure data concerning the extent to which special classes were organized throughout the United States a questionnaire regarding special schools and classes was sent to all cities of 10,000 or more. The class for subnormal children is defined as a class which "includes children who are so mentally retarded that they are unable to profit by the regular school program." The instructions accompanying the inquiry sheets specifically stated that the slow groups in a *three-track* system were not to be reported as special classes for subnormal children. Any attempt to aid children of low mentality by taking them from the regular classes assembling them in a small group, and giving them a curriculum fitted to their ability was to be reported as a special class for subnormals. Specific limits for admission were not

¹ Data obtained by personal investigation; United States Office of Education Bulletin 1928, No. 5; and "State Laws Relating to Special Classes for Exceptional Children," by W. A. Cox, in *Ungraded Magazine*, May, 1924.

² Heck, A. O. *Special Schools and Classes*. See Bibliography.

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set in this inquiry since the desire was to secure a report from all cities that attempted any special adjustment of work for pupils of low mentality. The survey shows that of the 48 states 40 have cities which report the organization of schools and classes for subnormal children. Table 1^a shows not only the names of the states in which the organization of such schools and classes is reported but it shows the number of cities, in each of the 40 states, which reported the organization of these schools and classes. Four eastern states, Massachusetts, New York, New Jersey and Pennsylvania, have the largest number of cities which report schools or classes for subnormal children (Table 1). Thirty-nine cities so report in Massachusetts; there are 38, 27, and 24 cities respectively reporting for each of the other leading states. Ten of the 40 states reporting have only one city

TABLE 1^a

NUMBER OF CITIES IN EACH STATE WHICH HAVE SCHOOLS
AND CLASSES FOR SUBNORMAL CHILDREN

State	Number of cities	State	Number of cities
Arizona	1	New Hampshire	3
California	13	New Jersey	27
Colorado	3	New York	38
Connecticut	12	North Carolina	5
Florida	1	North Dakota	1
Georgia	2	Ohio	20
Illinois	11	Oklahoma	4
Indiana	8	Oregon	1
Iowa	10	Pennsylvania	24
Kansas	5	Rhode Island	3
Kentucky	3	South Carolina	3
Louisiana	1	South Dakota	1
Maine	1	Tennessee	1
Maryland	2	Texas	7
Massachusetts	39	Vermont	2
Michigan	16	Virginia	5
Minnesota	9	Washington	7
Missouri	3	West Virginia	3
Montana	1	Wisconsin	17
Nebraska	2	Wyoming	1
		Dist. of Columbia	1
Total number of cities			317

^a Table XXXIX of Dr. Heck's report *op. cit.*

each to report classes for subnormals; these states, with one exception, are in the western and southern groups of states.

Schools for Subnormal Children

Of the 317 cities which report schools or classes for subnormal children 79 report the organization of schools. Of the 79 schools so reporting, 61 report only one school and 18 report 2 or more. Cleveland reports 20 schools, St. Louis, Missouri, 13, Los Angeles 10, Buffalo, New York, 6, Newark, New Jersey, 5, and Hamtramck, Michigan, 4; of the remainder of the 18 cities, 9 report 2 schools each and 3 report 3 each. Cleveland in her 20 schools reports a total enrolment of 1,684 pupils; St. Louis in her 13 schools reports 648 pupils enrolled and Los Angeles in her 10 schools reports 1,149 pupils. The enrolments in the schools of the 61 cities reporting one school each range from 13 in the school reported by one city to 2,612 in the school reported by another. Philadelphia reports the largest school, the next largest is reported by Cincinnati. Most of the schools for subnormal children which the cities have reported are relatively small. Data shown indicate that these schools, for the most part, are composed of from 2 to 5 or 6 classes; they are not large centers into which children are assembled from over extended areas.

Classes for Subnormal Children

Of the 317 cities which report schools and classes for subnormal children 236 report only classes, 45 report schools only, 34 report both schools and classes and 2 fail to report any statistics. Of the 270 cities which report classes 83 have only one class each, 59 have only 2 each and 26 have 3 each; in other words 62 and two-ninths per cent of the 270 cities have a relatively small number of classes organized. New York City reports the largest number of classes, which is 366; Chicago ranks second with 162 classes; Philadelphia is third with 157 and Detroit fourth with 128.¹

In Towns and Rural Districts

Although nearly every State in the Union has already made a beginning in the way of a program for dealing with mentally defective children, a plan has not yet been formulated, by even the most advanced states, for reaching all the

¹ Heck, A. O. *op. cit.*, p. 2. p. 4. pp. 13-16.

feeble-minded, the great majority of whom receive no education, adequate protection or training.¹

In the smaller cities and towns and in the rural districts comparatively little has been done to provide suitable training and instruction for backward and subnormal children. In these smaller school districts only one course of study, taught by the conventional methods, is provided with the result that the backward children do not receive the training and instruction suited to their needs.²

This lack of adequate education of subnormal children in rural districts is general throughout the country. There are many accounts of what ought to be done but no account of satisfactory work, or anything approaching it. Discussing the situation in his New Jersey State Educational Survey, Dr. Edgar Doll writes:

... Some districts actually exclude certain types of handicapped children without any feeling of responsibility for seeing that such children receive the benefits of special educational opportunity even when it is provided elsewhere. This is particularly true of the low grade feeble-minded who are frankly excluded from school in certain districts without legal warrant for such exclusion.³

OBJECTIVE IN EDUCATION

There is, broadly speaking, no very great clarity of purpose or objective in the education of retarded children, but it is universally recognized that early recognition and provision of a suitable type of education are the principal factors in any complete program for public control and care of the feeble-minded. When so recognized and trained from an early age, many who would otherwise have become delinquents can often maintain themselves as harmless, if not positively useful members of society.⁴

Unfortunately there seems to be no unanimity of opinion as to what constitutes a suitable education and the result

¹ Biennial Report of the State Department of Education of Wyoming, 1926-1928.

² Berry, C. S. *The Education of Handicapped Children in Michigan.*

³ Doll, E. A. *A Survey and Program for Special Types of Education in Trenton, N. J.* p. 22.

⁴ McLeod, B. *Special Classes for Handicapped Children.*

entails unnecessary waste. Realizing this Dr. Berry wrote as follows: "There has been much time, money and effort wasted in the education of subnormal children through failure to recognize clearly the proper aim of education in the case of this type of child. Since about 20 per cent of the adult population are engaged in unskilled labor the folly of attempting to prepare children of the most inferior intelligence for skilled labor or for electrical work is self-evident. The aim of the teacher, after a thorough trial in the special class has demonstrated the impossibility of the pupil's ever successfully doing regular grade work, should be to prepare him to become a law-abiding, self-supporting citizen in the simplest occupations."¹

In some places and for some children the purpose is apparently to restore the child to the regular grade after corrective teaching or improved motivation. In others the teacher faces with despair the aspect of releasing subnormal children to a world in which they cannot adjust, and regrets the lack of adequate resources for institutional commitment or community supervision. In these instances, although an emotional feeling of responsibility exists, little executive effort is made to obtain supervision or institutional care for these children after leaving school. Teachers and supervisors have a keen feeling of responsibility but as a rule the school administrators do not display much social conscientiousness in relation to the child's problem.²

Further purposes seem to be to give the special class child as much academic instruction as he can possibly absorb under the best conditions of instruction in spite of the obvious inability of such children to profit adequately from such instruction. The result is that other types of instruction which might be offered more successfully receive a minimum amount of attention to the child's consequent disadvantage.

The problem is to teach these retarded children to know and to behave, to give them the necessary knowledge to succeed to the limit of their ability and social level, and to train

¹ Berry, C. S. Michigan State Dept. of Education. Bulletin No. 11.

² Doll, E. A. *op. cit.* pp. 27-28.

them to social habits which will enable them to behave perhaps above the limit of their mental ability and social level.¹

METHODS OF SELECTION

Dr. Edgar A. Doll discusses the procedure followed in New Jersey which seems to have general application to the whole country. He writes as follows:

There is no standard specification of the kinds of children who should be included in such classes, which probably accounts for the miscellaneous character of the types therein represented. In general we may say that children find their way into these classes by their failure to progress in the regular classes under ordinary conditions. Where the mental standard for admission to special classes is employed there is a tendency to admit children on the basis of an I. Q. ratio rather than on the basis of three years or more of subnormality.

The usual method of selection of children for admission to special classes is somewhat as follows:

The detection of the child's initial maladjustment or school failure is left to the classroom teacher. She refers educationally unsuccessful children to the school principal if in her judgment the reason for their lack of success is some special handicap. The school principal refers the case to the supervising principal of the district or to the city superintendent, who in turn refers the case to the supervisor of special classes, where such exists, or to the special class teacher who might receive the case. (In one large city these children are referred to a child guidance clinic. In certain districts children are referred to a county mental clinic or to an institutional clinic in affiliation with private, county or state public welfare institutions.) The child is then usually examined by a special class teacher whose teaching certificate requires that she shall have had some training in mental tests and measurements.

The most common practice consists in applying the Binet-Simon test supplemented by the child's record. The child is usually classified for admission to the special class if his Binet I. Q. is below 70, and in some instances if his I. Q. is below 80, there being a general tendency to increase the I. Q. beyond 70 in spite of the admission that such children may not be subnormal in the usual sense.²

¹ Anderson, M. L. *Essential Characteristics of the Type of Education Best Adapted to the Needs of the Mental Defective.*

² Doll, E. A. *op. cit.* pp. 24-26.

TYPES OF CHILDREN IN SPECIAL CLASSES

Intelligence Quotient Range

Statutory definition of the type of child for whom special classes are designed varies from the "feeble-minded who are yet capable of instruction" of Missouri, to those who are three years or more retarded or below normal in Massachusetts, New Jersey and New York. In the statutes of Connecticut and Oregon these children are designated as "educationally exceptional." Under this designation Connecticut includes all children over four and under sixteen years of age who are incapable, because of mental or physical handicap, of receiving proper benefit from ordinary instruction. Oregon includes all children from six to seventeen years old who are not receiving proper benefit from ordinary instruction, either because of exceptionally keen mental qualities or because of mental or physical handicaps. Utah and Illinois include also those in danger of becoming delinquent. Illinois also specifically includes psychopathic and psychoneurotic children.¹

The greatest amount of uniformity in the statutes or regulations governing the admission standards for assignments to special classes exists in the three eastern states. The Massachusetts and New York statutes are patterned after the New Jersey law, according to which children who are three years or more below normal mentally must be assigned to special classes. The Alabama statute is similar. . . .

Minnesota restricts the assignment to high grade mentally deficient and backward children, with I. Q.'s from 50 to 80, and apparently assigns both grades to the same classes. Missouri, by law, provides for a dual system of classes, namely: special classes for the feeble-minded, admitting children who have been clinically examined according to the regulations of the State Department of Education, and whose Binet I. Q.'s vary from 30 to less than 70, whose Binet ages vary from three to nine, and who are incapable of doing around third-grade work; and ungraded classes for the backward, admitting children with I. Q.'s of from about 65 to 90. Many of the latter must be restored to grade as quickly as possible. The Missouri standards have been followed by many schools in Ohio which have availed themselves of the former Psycho-Educational Clinic of the Bureau of Special Education of Miami University.²

¹ Haines, T. H. *Mentally Handicapped Children.*

² Wallin, J. E. W. *op. cit.* pp. 18-19.

The new regulations of 1929 in New York specified that children shall be eligible for special classes if they have intelligence quotients between 50 and 75 and mental ages between five and ten, as determined by individual intelligence tests competently administered.

Behavior Cases

Unfortunately the special classes for retarded children seem to be looked upon by many teachers as a convenient place to send their troublesome behavior problem children. As Doctor Wallin states: "A large number of special classes throughout the country are still dumping grounds for all sorts of pedagogical ne'er-do-wells, all grades of mentally deficient and intellectually backward children, and normal children with specific mental, educational, social or physical disabilities."¹

Mentally and Physically Defective Children

The only statement found of policies regarding children who are both physically and mentally defective is the following list of regulations of the Child Guidance Clinic, Newark, New Jersey:

1. Children who are defective in hearing and have an intelligence quotient of 50 or more will be considered capable of profiting adequately for the special work provided at the School for the Deaf.
2. Children who are defective in speech and have an intelligence quotient of 81 or over will be capable of profiting adequately from the special work provided in speech classes. Children having I. Q.'s of 70-80 will be suggested for a trial of four to six weeks in such classes with referrals to this department if further recommendations are necessary. Children with speech defects and with I. Q.'s less than 70 will be recommended for Binet placement.
3. Children with defective vision and an intelligence quotient of 70 or higher will be considered capable of profiting adequately from the special class work provided in the Sight Conservation classes. Such children with an I. Q. less than 70 will be recommended

¹ Wallin, J. E. W. *op. cit.* pp. 19-20.

for placement in a Binet Class (mentally retarded children). Children who require education in classes for the blind and have an intelligence quotient of 50 or higher will be considered capable of profiting adequately from the special work provided in the Classes for the Blind.

4. Children needing admission to the School for Crippled Children because of orthopedic conditions who have an intelligence quotient of 70 or over will be considered capable of profiting adequately from the special work provided in the School for Crippled Children. Such children whose I. Q.'s are between 60 and 70 will be considered similarly except in the case of those whose physical appearance (marking them as obviously "mental defectives") might attach an undesirable connotation to the special work provided in the school.¹

For public school purposes, the several types of mentally retarded children, who should be trained in special classes for the mentally retarded, if they are to be admitted to public schools have been well described by Dr. Doll of Vineland as follows:²

Feeble-minded, imbecile grade. Those children who can attend to their physical needs and who under training can learn to perform very simple occupational tasks but who do not progress in academic work beyond the second grade under the best methods of instruction. At maturity they require more or less constant supervision because they are incapable of independent social and economic adjustment except under the most favorable conditions. The law does not now provide for their exclusion from school, although those of them whose mental ages are below five years are ineducable under public school conditions. They are more successfully trained in public institutions than in public schools. Their training is limited to the formation of specific habits in social and occupational adjustment. These children may escape detection at the time they are admitted to school but will usually have demonstrated their incapacity for normal instruction by the time they are ten years of age. There is usually little difficulty in recognizing them by means of the Binet test examination. Their I. Q.'s will be below 50 and their mental ages below eight years. The law provides for their instruction in special classes for children who are three years or more below normal.

¹ Regulations of Child Guidance Clinic, Newark, N. J.

² Doll, E. A. *op. cit.*

Feeble-minded, moron grade. Those children who (1) may learn to read and write to some extent under special instruction but who will profit little from ordinary academic instruction beyond the fourth and fifth grade; (2) who may learn to perform relatively simple, unskilled, occupational or industrial tasks with occasional oversight, and may be capable of earning a living under favorable conditions and under supervision, but who are incapable of progressing industrially beyond the common labor or apprentice levels in simple trade or industrial pursuits; (3) who may acquire some advantageous social habits but who are incapable of successful adjustments to changing social or industrial conditions independently of outside help because they lack judgment, common sense and planning capacity, and who fail to display sufficient resourcefulness, reasoning, initiative, energy and insight to acquire respectable standing as good citizens.

At maturity these morons have mental ages between eight and approximately twelve years. Usually their adult mental ages are below eleven years. Their early detection on an I. Q. basis is difficult because the arrest in mental development may be gradual or even sudden and because they are easily confused with other types of mental subnormality. The most distinguishing characteristic of the moron, aside from his inability to profit materially from both academic and manual or industrial education, is his constant need for supervision in his adjustments and his lack of energy and resourcefulness in making these adjustments even under constant stimulation.

The school law does not permit the exclusion of morons on the ground of their relative ineducability. On the contrary, it specifically provides for their instruction in special classes for those who are three years or more below the normal. The feeble-minded moron is educable under public school conditions under sixteen years of age when instruction is adapted to his particular limitations and needs. Many morons are capable of successful adjustment in the community after instruction in a special class if their conduct is not anti-social and if their occupational capacity enables them to earn a living and if the supervision necessary for their continued success can be provided. Otherwise the welfare of the state, the community and the individual is better served by institutional commitment after a period of special class instruction in the public schools. Many of these children, however, because of home conditions and other circumstances, can be more successfully cared for and trained in the public institutions of the state rather than in the public schools even before puberty.

The detection of the moron is difficult on the basis of mental

tests alone because his degree of intelligence as measured by such tests as the Binet-Simon test overlaps the lower limits of normality on these tests. Consequently the accurate differentiation of the moron, from the inferior normal, is a problem requiring technical skill, in order to avoid confusion with those other forms of subnormality and disability which so often resemble the moron grade of feeble-mindedness. Indeed, this very difficulty has encouraged laymen and even some technical authorities to discard the significance of the moron as the highest degree of feeble-mindedness and to include under this term the lower intellectual limits of normality. Thus, in certain quarters, the moron is conceived as a certain range of intellectual level, differing only in degree and not in kind from the normal. That this practice is not scientifically tenable, and that it leads to grave malpractice in education, is evident from the factual study of the conditions of the special classes.

Inferior normals. This type includes children of relatively low I. Q. or mental age who are not feeble-minded but whose instruction in the regular classes of the public schools is seriously handicapped by their inferior verbal intelligence. These children have a verbal intelligence level comparable to that of the feeble-minded moron grade but they are not morons because they are not feeble-minded. The true moron is incapable at maturity of successful social and economic adjustment independently of supervision. He lacks energy, common sense, resourcefulness and social conformability. But the inferior normal of the same intelligence level as the moron possesses these essential social powers which the moron, being feeble-minded, lacks. The inferior normal person is therefore capable of successful social and occupational adjustment independently of supervision, although his adjustment may be made at a low social level from the standpoint of culture and wealth. In contrast with the moron he is self-sustaining and self-directing and is a good citizen, however humble his situation in life.

The inferior normal may be thought of as verbally deficient rather than deficient in total mental capacity. His handicap is essentially an incapacity for rational understanding of abstract ideas requiring language comprehension. He is therefore limited in his success in academic school work but is successful in manual or industrial training and in his social adjustments at school and in the community. As an adult his mental age falls between eight and twelve years as measured by the Binet intelligence tests, but in contrast with the moron his performance on non-linguistic tests may reach or even ex-

ceed the average. In other words, he is manually minded. His perceptions of industrial and social relations rise above his cultural level, and his occupational success and social adjustment remove him from all suspicion of true feeble-mindedness.

Inferior normal children are not easily distinguished from the feeble-minded of moron grade. The distinction is made on the basis of their greater prospect of social success, their relatively superior manual and industrial superiority as compared with the feeble-minded, and their higher performance on non-linguistic tests. Like the feeble-minded, however, they are so handicapped in academic school work that they require special instruction at school in courses of study suited to their needs. These children are not institutional cases and can be taught at a higher level of training than habit formation. They have insight and understanding which are lacking in even the highest types of feeble-minded morons and they succeed in life. Their success, however, like that of all children, is greater if their school instruction is adapted to their particular needs. Their education should, therefore, be sharply distinguished from the type of special instruction offered for the feeble-minded.

These children are much more numerous than the feeble-minded, constituting not less than 5 per cent of the school population as compared with 2 per cent of morons and imbeciles.

Backward children. This group of mentally subnormal children is commonly composed of slow or dull normal children whose mental retardation, whether temporary or permanent, is not sufficiently serious to require special class instruction. These children bridge the gap between low average normality and inferior normality in the general distribution of children according to intellectual ability. These children in progressive school systems are cared for as slow-moving normal groups rather than as mentally handicapped children who require special class instruction. This group, therefore, requires some differentiation of instruction, but falls outside the field of special education proper. They are mentioned here merely to show the relation between the mentally handicapped and the normal.

ORGANIZATION

State. In most cases the states supervise the work of the mentally handicapped through special bureaus or divisions in the department of education.

Cities. Dr. Berry finds that in large cities the tendency is to educate the younger subnormal boys and girls in spe-

cial classes located in the regular grade schools but to segregate the older children into separate special schools.¹

Apparently the special class center has not been developed to any great extent; in New Jersey, for example, serious development was found in only one place. The special school, or special class center, has certain advantages and disadvantages. The chief point in its favor is the fact that it makes better classification possible, departmentalization of instruction and more interclass cooperation. A compromise between the isolated special class and the center is to combine two special classes in one building, the result being an increase in morale and improvement in instruction.²

Equipment. These special classes are usually located in the less desirable classrooms or buildings, although this is not always the case in the larger districts. Equipment on the whole is rather meager and materials are also scarce and difficult to obtain. In many places the products of handwork is sold and the income expended for additional equipment independently of regular school supplies.^{3 4}

Size of Classes

Ten is the minimum in all the states which have established definite standards, except Minnesota, which authorized classes for only five children. . . . The described maximum enrolment for the mentally deficient is 15 in New Jersey, New York and Minnesota, 18 in Massachusetts, Pennsylvania and Minnesota, when the classes are departmentalized. In Pennsylvania the maximum is 25 for backward and the disciplinary classes, and 20 for the restoration classes.⁵

The average class enrolment for the four cities which report the largest number of cases—New York, Chicago, Philadelphia and Detroit—are 19, 20, 19.7 and 23.5 respectively.⁶

Length of School Day. No survey has been found which gives much data on this item but apparently the day for

¹ Berry, C. S. *op. cit.*

² Doll, E. A. *op. cit.* pp. 30-31.

³ Doll, E. A. *op. cit.* p. 30.

⁴ For *Location* see Heck, A. O. *op. cit.*

⁵ Wallin, J. E. W. *op. cit.* pp. 20-21.

⁶ Heck, A. O. *op. cit.* p. 16.

these classes is the same length as for regular classes except that in some instances it may be shorter.¹

Transportation. The reports on this item are meager. In some instances the cities pay the carfare of children attending special schools, and very occasionally transportation by bus is provided.

SUBJECT MATTER AND METHODS OF INSTRUCTION

Serious consideration must be given to the curriculum best suited to the needs of these subnormal children. The aim is to develop the child's mental capacities and the control of his emotions to the point of adequate social adjustment and the curriculum must necessarily be determined in part by adult requisites. The first point to consider is what work these subnormals will eventually be able to do. They will naturally be limited to simple routine tasks such as bundle wrapping, messenger service, routine farm work, operation of power machines, and similar occupations. On the other hand, a definitely prevocational or vocational training qualifies these pupils for occupations of greater economic importance. For example, a course in home making can supply girls with sufficient experience of housekeeping to qualify as maids or the school cafeteria can be utilized to give them practical training for restaurant service. Girls showing skill at sewing could be trained for dressmaking and millinery. In the same way, suitable training has enabled many boys to qualify as assistants to carpenters or electricians when they would otherwise have been incapable of such work.

Illustrations are given of three fields of academic work which should be included for these children, namely, arithmetic, reading and social science. Trade arithmetic is needed;

¹ Coxe, W. W. "The length of the school day is not a matter of department regulation. Frequently the day for these classes is the same length as the regular classes but in some instances is somewhat shorter. This is particularly true in those classes where children prepare their own lunches." *Abst: Particular Aspects of Education of Retarded Children to be Studied.* New York State, 1930. Unpublished.

pupils must have sufficient practice to enable them to make change quickly and accurately; they should know how to deposit money in the bank and how to draw checks. They should realize the advantage of interest-bearing accounts and have sufficient drill in the fundamental operations to give them skill in solving life problems which confront them. As yet there is no unanimity as to how much time should be spent on reading and what kind of reading should be taught to subnormal children. It is, however, agreed that these children can be taught to read understandingly although for them it must necessarily consist largely of mechanistic processes. Few subnormal children will read books for pleasure after leaving school but as adults they will meet with certain reading situations which can be anticipated in the classroom. For example, they can be taught to read the newspapers; they can learn where to find news items of interest, "help wanted" advertisements, the "lost and found" column, the sports page, food and clothing, advertisements and so forth. They should be taught how to read signs in common use, to read and execute directions, to recognize the names of streets and public buildings, to fill out application blanks and other similar forms. The child's mentality will be the governing factor in deciding the method used in teaching reading, the choice of literature and proportion of time spent in reading for pleasure.

Social science should emphasize a knowledge and appreciation of the local community. Pupils should know where the recreation centers are, how to use them and (what is more difficult) how to choose between clean and harmful recreations. They should be familiar with the activities of social service agencies such as the out-patient department of the hospital, the health department, the child welfare bureau, the legal aid bureau, the police department, and so forth, and know what steps to take to secure service. Civic duties, particularly to friends and neighbors, must be taught and opportunity provided for some fulfilment of these obligations. In short, this phase of the course should aim di-

rectly at the general goal, which is the developing of self-respecting and, so far as able, self-supporting adults.¹

As a result of intensive study on this question Dr. Doll finds that academic instruction occupies about 80 per cent of the school day and manual and industrial subjects about 20 per cent. The academic instruction, however, may include general exercises, health education, simple forms of class work and perhaps dramatics.²

Dr. Berry stresses the importance of physical and manual training and the formation of desirable habits and considers that they should come before the acquisition of knowledge. As the majority of subnormal children will earn their living at manual labor, good health and physical strength are of vital importance, otherwise the children are doomed to become a charge on the public. The formation of desirable habits in the education of a subnormal child is just as important as the development of strength and skill because he could not hold a job unless he kept the general rules expected from workers, such as regularity and punctuality.

More attention should be given to the development of correct speech. These children will do little reading and less writing but speech is in constant demand and the ability to express themselves simply and grammatically will be of the greatest value to them through life in making social adjustments. Every child can be taught to write at least his own name and many can be taught to express their ideas in simple written language. Legibility, not speed, should be emphasized. In order to educate subnormal children successfully in the public schools it is necessary to break away from the traditional course of study with respect to subject matter and methods of instruction. It is important to remember that it is not a question here of preparing these children for high school but for life; the special class is identical with a finishing school and the responsibility lies with the teacher to give

¹ Cornel, Ethel. *Principles Underlying Special Class Education in New York State*. 1928.

² Doll, E. A. *op. cit.*

the type of training that will enable them to become, as far as possible, law-abiding, self-supporting citizens.¹

The Binet Schools and classes at Newark, New Jersey, furnish an interesting example of the development of special education for subnormal children. The training is organized under the following divisions:

1. Academic Subjects
2. Activities
3. Industrial Values
4. Social Habits
5. Personal Habits.

Tentative courses of study are now being used for the Academic Subjects and the Activities. These courses cover the grades from kindergarten to eighth grade inclusive for the Activities and from grade one to six for Academic Subjects. It was found that very few of these children were able to progress beyond the fourth grade. Plans are being considered for the teaching of the Industrial Values, Social Habits and Personal Habits under a very definite departmental scheme. Although this is not a course of study, it is a teaching program with aims and standards.

The Academic Subjects taught are reading, writing, arithmetic, oral and written language which are correlated closely with the subjects taught as Activities. These consist of woodwork, industrial work, sewing, household science, electric work, motor and household mechanics and physical training.

Under Industrial Values the children are taught the following: regular attendance; punctuality; ability to keep in harmony with school atmosphere; ability to respond to direction without waste of time; ability to accomplish what the teacher expects the children to do; ability to persevere.

Social Habits includes the teaching of: truthfulness; ability to confess wrongs and make amends; ability to stand for fairness and be a good loser; ability to show respect for property and people.

¹ Berry, C. S. *op. cit.*

Personal Habits teaches the children: how to show cleanliness in habits of person, dress and speech; how to provide themselves with necessary materials and keep them in order; how to exercise self control in avoiding quarrels; keeping temper, and refraining from sulking; how to practice thrift in the use of money, paper, books and materials.¹

Differentiated Curriculum

Real differentiation consists fundamentally in differences of quality not quantity and cannot be achieved by the simple process of studying the standard curriculum more slowly; diminished quantity does, however, play an important rôle. Subnormal children obviously cannot acquire as much in quantity as the typical group and they also require more time for any given quantity than is the case with typical children. They need special methods of instruction and longer total period. These children require much instruction in fields which are entirely omitted from standard courses of study, as children are expected to acquire such information merely by their environment. To quote an experienced teacher of these special classes: "Much that is self-evident to normal children, or is a part of their home training, must be taught from many angles to retarded children and drilled upon until it becomes part of the permanent body of their habits and skills."

The primary essentials for living in present-day society are the ability to perform service that warrants the payment of wages and the judicious expenditure of these wages. In the question of vocation the sub-typical person is naturally at a disadvantage, for not only does he lack the degree of intelligence to prepare him for higher and more skillful occupations, but he also lacks the imagination and initiative to change his vocation and location or to originate a business venture of his own. Training for vocations is timed in accordance with intelligence. The professions require a uni-

¹ Anderson, M. *Essential Characteristics of the Type of Education Best Adapted to the Needs of the Mental Defective*. 1928.

versity course which begins comparatively late but other types of vocation can be acquired at early stages of development progressing downward until the point is reached where brawn is more important than brain and physical development is the chief factor in determining readiness for work. This should certainly mean that the lower the degree of potentiality the earlier should attention be centered on vocation. The subnormal child can be put at productive work earlier than the child who needs more time for preliminary training but he should be prepared for his work as long as possible. Therefore this is another reason for an early start.

Differentiated Method

It is impossible and impracticable to make hard and fast distinctions between curriculum and method when dealing with special education for mentally retarded children. The chief aim is to find the methods best suited to this type of intelligence. The foundation of useful habits should be the basis of education. Other children may be able to examine and criticize customary usage and perhaps improve it, but the subnormal child will probably never develop beyond the point of acquiring habits. He cannot be initiated into the reason why; for him habit formation in the larger sense represents the extent of educability. It is not meant, however, that these children should be taught nothing more than habit formation, but the idea is that the scope of habit should be enlarged as a method of education. Subnormal children should be equipped with more habitual responses to the daily situation of life than is necessary for more highly endowed persons, in fact, they should be equipped, as far as possible, with standardized behavior. In primitive society habit was a social need for all, in modern society it is a psychological and pedagogical inevitability for some. Modern life is characterized by a minimum of these necessary habits. Convention, custom, manners are powerful governing influences in our daily lives.

Alfred Binet's great discovery consisted of the fact

that mental retardation really means failure to develop. Mental defectives are children as far as intelligence development is concerned and what applies to normal and bright children of preschool age is equally applicable to those who are physically older but mentally still comparatively young. Based on this psychological fact, education should be differentiated. For subnormal children the scope of habit should be extended as far as possible, as their independent existence in the complicated society of the present day depends to a great extent on the possession of prepared replies to as many situations as possible.

Behavior Patterns

A certain type of inadequacy is caused not by a deterioration in the individual but rather by the increasing demands of present-day living problems. A given degree of intelligence is probably less adequate for independent living in society today than was the case two thousand years ago. One important way of meeting the problem for mentally retarded children is to provide them with prepared automatic and semi-automatic responses. A large number of morons can actually earn their own living in institutions. They have the innate ability and can be given the skill to make themselves self-supporting, but they cannot maintain themselves in the complex society of today which requires too much planning, foresight, self-restraint and dealing with other people. It is an interesting fact that a certain number of morons are able to earn their living outside of institutions under institutional supervision; this is, therefore, the key to the problem. The subnormal child can be prepared for complete independence if the need for complicated reasoning is eliminated and a comparatively large number of habitual responses substituted, patterns of behavior with which to meet situations.

Drill Methods. Drill to the point of automatization is a most reliable procedure and is one of the oldest devices of the teacher.

Concrete Instances—Specific Application

When dealing with subnormal children it is futile to present general principles, theories and philosophies; they need limitless numbers of specific instances. A child of high intelligence is quickly bored with examples of the operation of any general law or principle as he feels quite capable of making his own applications. But the subnormal child will get verbal, not real, images from such words as "democracy" and "citizenship." *He must proceed toward maximum development by the process of amassing concrete instances.*

The same reasoning is applied to the need for specific application. General principles of arithmetic will not teach the subnormal child how to shop and budget; he must actually apply these principles to specific acts. He will not know how to apply the general principles of grammar but must be drilled in correct usage. He must be taught letter writing; principles of rhetoric such as narration and description will convey nothing to him. It is only with the needs of these children in mind that one understands the formerly incomprehensible titles of an ever-increasing number of high school texts on "business English" and "shop mathematics."¹

TEACHER PERSONNEL

The following extract from Dr. Wallin's *Ohio State Survey* gives a general idea of the general and specific training required of teachers of subnormal children. It also shows that no uniform standard for the professional training of these teachers exists in the United States.²

Connecticut, Massachusetts, Minnesota, Missouri, New Jersey, New York, Pennsylvania and Wisconsin have established minimal requirements for teacher certification. Apparently all of the states require, as a preliminary basis for certification, the general educational preparation needed for the elementary certificate. Missouri requires

¹ Horn, John Louis. "Special Education of Dull Normal Children." *Educational Research Bulletin*. March, 1928.

² Wallin, J. E. W. *op. cit.* p. 30.

a third year of general training, while Pennsylvania and New York apparently apply a number of credits in special education on the elementary certificate of the normal school diploma. Connecticut sets a special qualifying examination.

Experience in the regular grades or in special classes is a requirement for certification in all of the states except in Massachusetts and Missouri. The detailed requirements are as follows: In Connecticut, at least three years' successful experience in the elementary grades, or one year in classes for children below normal; in Minnesota, two years of successful experience in the elementary schools, and successful special-class experience in the grades or one in classes for sub-normals; in New York, two years of successful special-class experience (this, however, is an optional requirement); in Pennsylvania, two years of special-class experience (for which 8 credits are issued in satisfying the requirements of specific professional preparation); and in Wisconsin, two years of undesignated teaching experience.

The requirements for specific technical special-class training vary from an undesignated amount in Connecticut and New Jersey, to a maximum of one year in Massachusetts; Minnesota requires as a minimum from seven to twenty quarter-hour credits, according to the life of the certificate; Wisconsin, 8 credits; New York, from 6 to 12 credits; Missouri, 12; and Pennsylvania, 12, if the 8 granted for two years of experience are deducted. The former Bureau of Special Education of Miami University issued a certificate in special education on the completion of at least fifteen semester hours of work in special education. This is equivalent to one semester's work, and was regarded merely as a transitional minimal requirement. The University definitely discountenanced the practice rife in institutions for the feeble-minded, of issuing certificates for merely one summer term's preparation. The Ohio State Department of Education accepted twelve of these credits on the requirements for the elementary certificate, while the University applied all the credits on the requirement for its normal-school diploma.

Salaries

Salaries vary greatly in different parts of the country—probably depending upon community costs and community standards.

Table 2 shows the salary schedule in 8 cities of the United States.

TABLE 2
SALARIES OF TEACHERS OF RETARDED CHILDREN

City	Min. salary	Max. salary	Yearly increment	Same as element. grades?	Same as junior high?	Same as senior high?	Or special schedule?
Boston.....	\$1536	\$2496	\$96 00	No	No	No	Yes
Cleveland, Ohio..	\$1200	\$2400 to \$2800 with additional credits	\$120.00	Yes	No	No	No
Detroit, Mich ..	Special A.— Chn with C. A. under 13 years \$1600	Special A.— \$2600	\$100.00	Yes— increase but not salary	Special B.— C. A. over 13 years	Min. \$1700 Max. \$2800	Same as Intermediate and High School Teachers
Los Angeles, Cal.	\$1400	\$2440	\$70.00	Yes	\$1800 min.	\$3040 max.	.....
Newark, N. J....	\$1500	\$3600	\$100.00	Yes	No	No	No
New York City..	\$2040	\$3830	\$150 or \$156	No	Yes	No	No
Philadelphia....	\$1500	\$2700	\$100.00	No	No	No	Yes
St. Louis, Mo....	\$1200	\$2700	\$100.00	Yes

Note: C. A. Chronological age.

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COST OF EDUCATION

Table 3 compiled by the Educational Research Service—under the date of February 1930—gives the comparative costs of educating the mentally defective children in city school systems of over 400,000.

TABLE 3

SPECIAL CLASSES FOR MENTALLY DEFECTIVE CHILDREN IN CITY SCHOOL SYSTEMS. ATTENDANCE AND COST OF INSTRUCTION, 1925-26 CITIES OVER 400,000^a

City	Average daily attendance	Expenses of supervision	All other expenses of instruction	Total cost of instruc- tions ^b	Cost per pupil in average daily attendance
1. Los Angeles, Cal...	557	—	\$122,855.28	\$122,855.28	\$220.57
2. San Francisco	522	—	23,812.46	23,812.46	45.62
3. Washington, D. C.	225.3	\$3,387.21	45,458.80	48,846.01	216.80
4. Chicago ^b	2,618.4	4,279.21	304,417.68	308,696.89	117.89
5. Baltimore, Md....	1,152 ^c	2,255.00	71,480.11 ^d	73,735.11	64.01
6. Boston.....	1,657	—	—	—	—
7. Detroit, Mich....	2,403	— ^e	269,681.28	—	—
8. St. Louis, Mo....	475	4,112.00	66,547.00	70,659.00	148.76
9. Newark, N. J....	577	4,300.00	143,790.34	148,090.34	256.66
10. Buffalo, N. Y....	892 ^e	— ^e	— ^f	—	—
11. New York City....	5,844	28,503.00	987,067.00	1,015,570.00	173.78
12. Cincinnati, Ohio...	731	141.57	73,837.37	73,978.94	101.20
13. Cleveland, Ohio...	1,300.3	— ^e	— ^f	—	—
14. Philadelphia.....	3,894	—	449,637.02	449,637.02	115.47
15. Pittsburgh, Pa....	92	2,044.64	24,125.04	26,169.68	284.45

^a Source of Data: From unpublished manuscripts on file at the Office of Education, U. S. Dept. of the Interior, Washington, D. C., made available through the courtesy of officials of Statistical Division. Figures in Column 6 computed by the Research Division of the National Education Association, February, 1930.

^b Includes epileptic.

^c Enrolment.

^d Teachers' salaries only.

^e Total expense of supervision for special classes was not distributed according to type: \$20,470, Detroit; \$32,792.96, Philadelphia; \$368.95, Boston; \$10,000, Buffalo.

^f Expense of instruction for special classes was not distributed according to type: \$49,416, Boston; \$135,244, Buffalo; \$562,763.50, Cleveland.

^g Amount not reported; three supervisors employed.

^h Salaries of supervisors, principals, teachers and clerks and cost of text books and educational supplies.

APPRAISAL OF EDUCATION

Feeble-mindedness is recognized as a distinct problem of modern education. The development of the Binet-Simon tests about 1910 gave some definite idea as to the number of mentally deficient children in our schools. From 1910-1920 much progress was made in many of our large public school systems for provision for these children. Permissive legislation was passed in certain states giving state aid to rural districts to encourage the establishment of special education for defectives outside the large municipalities. About eight years ago, however, the special-class movement suffered a distinct decline. The problem seemed too difficult to solve, the teachers too difficult to get and the returns too slight in relation to the excessive costs. But now interest is again aroused and the public seeks definite information, asking such questions as: What is the modern special class? How is it established? What children compose it? What are its objectives, its methods, its costs? Does it meet a real necessity and is it justified by its results?

In view of this renewed interest we naturally ask ourselves how we shall undertake to improve the present situation and what are the probable lines of development. In order to answer these questions we can review the present situation throughout the country by stating some of the general assumptions regarding special classes and then critically examine these assumptions in the light of the actual facts.

1. It is assumed, for example, that the special classes for the feeble-minded contain only feeble-minded children. Unfortunately this is not the case as observations have shown that these classes sometimes contain subnormal children who are not definitely feeble-minded. This is caused by the fact that in many places there has been a tendency to ignore the importance of feeble-mindedness to the extent of placing in the class all kinds of children who showed marked mental retardation as indicated solely from an I. Q. status. No attention was paid to the question of nationality, social status, race, special ability and other diagnostic factors.

This confusion complicates the problem of special-class education and is also a menace to the welfare of intellectually retarded children who are not technically feeble-minded.

2. It is assumed that adequate provision for school children in large school systems will include special centers or special schools which will be superior in every way to the isolated special class. But this assumption is open to question as we hear that in some places the single class has definite advantages over the special center and that the concentration of children in these centers does not always result in the advantages expected.

3. It is assumed that the class is composed of not more than twenty pupils of practically the same mental level and that the average attendance is about 80-90 per cent of the enrolment. But many administrators object to the limitation of twenty, and experimental studies have shown that the efficiency of instruction is not harmed by as many as twenty-five homogeneous children. Many special classes show a wide range of variation in mental level and type of pupils.

4. It is assumed that educational ideals and objectives are clearly defined, that there is sufficient provision for bridging the gap between the special class and the community, both during and after the period of attendance; that the curriculum is more than a compromise between the traditions of the institutions for the feeble-minded and those of the academic public school system; that this curriculum is closely identified with the educational ideals that have been set up and that too much emphasis is not placed on academic work as compared with handwork; that the handwork is not too formal, merely a relic of the primitive arts and that practical industrial arts are to be found in most places. Unfortunately these conditions are not found in actual practice. Some teachers and supervisors have not clearly defined the purpose of the special class in terms of social and educational objectives. There is considerable difference of opinion regarding the curriculum especially with respect to the traditional manual subjects and the proportion of academic time. A discussion of this question with the teachers usually re-

sults in vague general statements, instead of logical arguments or demonstration of results.

5. Finally it is assumed that the achievements of the special class are easily demonstrated and that they have been reduced to objective measurement. But the majority of these statements of results are formulated in terms of wishes instead of in forms that would persuade a board of education or a school superintendent to increase or even maintain the special class budget. In only a few places is there a real effort to justify the special class on a strictly objective and practical basis. In some instances there are splendid demonstrations of the cash, social or individual value of special class education which more than justifies cost and effort. Some communities are solid in their support of the program as the results are so convincing and they quickly resent any interference or curtailment, but in others there is an almost justifiable lack of support.¹

Summary and Conclusions of Appraisal

The following excerpts from "Employment Histories of Mentally Deficient Boys and Girls," by the Children's Bureau, Washington, D. C., very aptly illustrate the value of special classes for the education of mentally retarded children:²

The present study covers the after-school histories of 1,067 boys and girls who had been enrolled in the special classes for mental defectives of public schools in seven cities in different parts of the country. Most of these boys and girls can be roughly classified mentally as morons but some were high grade imbeciles and others were only slightly subnormal, two-thirds of them having intelligence quotients between 50 and 70; 20 per cent having intelligence quotients of 70 and over. The chief difference between this group of mentally deficient young persons and individuals of corresponding mental levels who have been in institutions for the feeble-minded is that relatively few of the special-class boys and girls had been brought to court for

¹ Doll, E. A. *The Next Ten Years in Special Education*.

² Employment Histories of Mentally Deficient Boys and Girls, Children's Bureau, Washington, D. C.

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delinquency and been placed on probation or sent to institutions. Fourteen per cent of the former pupils of special classes as compared with 74 per cent of the individuals included in the study of former patients of two Illinois State Institutions for the feeble-minded had been delinquent and as a consequence put on probation or committed to institutions for defectives or delinquents. The intelligence levels of the two groups were about the same.

As other studies of the after-histories of special-class pupils have done, this study also demonstrates that most former pupils of special classes enter industry, more than nine-tenths of those included in the study having been employed after they left school. At the time the inquiry was made from three to seven years after the boys and girls left school, 54 per cent (68 per cent of the boys and 37 per cent of the girls) were gainfully employed on the date their homes were visited. The proportion of individuals found employed on the date of the study was very similar to that found in a study of former special-class pupils of New York City and also in a study of mentally deficient boys and girls of Cincinnati.

The evidence collected during the course of study on the duration and amount of employment which the boys and girls had had indicates, that on the whole young persons who have passed through special classes are employed for the greater part of the time after they leave school, but on the other hand, that they are not as steadily employed as young persons of unselected mentality. During the first years of their working lives covered by the present study the boys of defective mentality were unemployed on the average more than one-fourth and the girls (who did not marry) more than one-third of the time. That the mentally deficient young workers had much more unemployment than those of unselected mentality may be judged from the findings of several studies of young workers in attendance at continuation schools. The continuation school pupils of Milwaukee are more nearly comparable in age and length of work history to the mentally deficient young workers than other continuation school children about whom similar studies have been made. Sixty-three per cent of the Milwaukee boys as compared with 29 per cent of the boys from special classes had been out of work as little as one-tenth of their possible work histories and similar differences in the amount of time employed were found among the Milwaukee girls and the girls from special classes.

Like young workers in general, these boys and girls had a number of different positions during these first years of their working

lives; the boys averaged 6 positions and the girls 4 positions, the number at least in the case of the boys varying somewhat with the number of years which had elapsed since they left school.

The duration of the first position of the young workers was on the whole short; 40 per cent, about the same proportions of boys and girls, staying with their first employer less than three months. But this experience of keeping their first positions but a short time is common to all young workers when they first begin to work and is not peculiar to those of subnormal mentality. The individuals from special classes kept their first positions about as long as the children of unselected mentality included in the studies the Children's Bureau made in Boston and in Newark, New Jersey, and somewhat longer than children attending the Milwaukee continuation school.

At some time during the first years of their work history the boys and girls included in this study found positions which they were able to hold for long periods of time; 76 per cent of the boys and 61 per cent of the girls had worked continuously for one employer for at least a year, 37 per cent of the boys and the same proportion of the girls for at least two years. Many of those employed at the time of the study had been working continuously for the same employer for two or three years.

The occupations in which the boys and girls found employment were, on the whole, of the unskilled and semi-skilled types which require little if any preliminary industrial training or academic education. As has been brought out in other studies of city children who are mentally deficient, large numbers find work which they can do in factories.

That most of them were successful in at least one of the occupations they undertook is indicated by the fact that after some experimenting in jobs in which they remained but a short time, employment in the same occupation for from one to three years was a common experience. Among those who were employed at the time of the study were 35 per cent of the boys and 43 per cent of the girls who had been doing the same kind of work for at least a year's time.

It is also of significance that both boys and girls were said to have been unsatisfactory in only a small proportion of their jobs. The boys in 22 per cent and the girls in 20 per cent of the jobs about which information was obtained. Only 12 per cent of the boys' jobs and 10 per cent of the girls' jobs actually ended in discharge. Unfortunately there are no comparable figures available for workers of unselected mentality which would show whether or not these indi-

viduals from special classes were discharged more often than other workers.

At the time the study was made most of the boys and girls were at least twenty years of age. No doubt their earning capacity would increase to some extent when they become older. At the time of the study at least, their wages were apparently limited to those paid for unskilled and semi-skilled work and were relatively low in comparison with wages of skilled mechanics. The average cash wage of boys in their last job, which in most cases meant wages received in 1923 or 1924 at the time the study was made, ranged from \$19 a week in Cincinnati to \$27 in Detroit, where many boys were employed as laborers or semi-skilled operatives in the metal and automobile industries where wages were relatively high. About 12 per cent of the boys, some in each city, were earning \$32 or more a week. The girls' average cash wage in their last job ranged from \$9 a week in Cincinnati to \$15.50 in Rochester and Detroit and \$16.80 in the California cities and was slightly higher for those who were employed at the time of the study than those who had stopped work some time before. . . .

There was no indication that the individuals included in the present study of the higher intelligence levels worked more steadily than those of the lower levels; neither was there any association between intelligence ratings and the number of times the individuals had been discharged from their jobs. Little information about the personality of the individuals was available, but there is no doubt that in addition to the small number who had been placed on probation or committed to institutions for delinquents by the court there were many individuals whose conduct in school at least had been very troublesome. It is probable that the greater mental capacity of some of the individuals, especially those who had been transferred from the regular grades to the special class on account of their behavior, was offset by some defect in their personality which militated against their success in industrial life, and, on the other hand, the individuals of more limited mental capacity had favorable personalities which helped them in their industrial adjustment.

That special aptitude for hand work is important in connection with industrial success is indicated by the fact that boys and girls who had done well and had been in the upper grades in manual training and other kinds of hand work taught in the special classes were more likely to be successful in their jobs after they left school than those who had done poor work and had been in the lower grades. Both boys and girls who had done good work in industrial subjects had

had less unemployment on the whole, had held their positions longer, were earning better wages in their last jobs, and had had larger increases in pay since they entered industry than those who had done poor work in the special-class subjects.

The following excerpt from a study by Mabel R. Fernald corroborates the findings of the Children's Bureau:¹

More than half of all the occupations in which the boys and girls in this study were employed since leaving school were in the manufacturing and mechanical industries, most of the girls being factory operatives, the boys both factory operatives and laborers. Both boys and girls were employed in the outstanding industries of the cities in which they lived. There were a few boys who were successful in learning a skilled trade and a few others had attempted or were still trying at the time of the study to learn a trade, but these cases were rare. The work of the boys who were not in manufacturing and mechanical industries was varied and included such occupations as truck drivers or teamsters, helpers to drivers, general helpers in stores or markets, and privates in the army or navy. But a few of these boys who had been brought up in cities worked on farms. The occupations of most of the girls who were not in factories were in domestic service. Only a relatively small number of either sex had ever attempted office work or sales work, a type of work which considerable proportions of young workers of normal mentality enter, but they had done errand and messenger work, bundle and cash work in stores and had helped in the stock and shipping rooms of factories and stores.

RELATION BETWEEN SPECIAL CLASSES FOR THE
MENTALLY RETARDED AND STATE INSTITUTIONS
FOR THE FEEBLE-MINDED

Correlation With Welfare Institutions

There is comparatively little correlation between the special-class work in the public schools and the public institutions of the state. This is in spite of the need for admitting at least certain cases to institutions either before or after puberty. Special-class teachers, with their intimate knowledge of the children and their home conditions,

¹ Fernald, Mabel R. *Some Problems Relating to the Education of Mentally Defective Children.*

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and particularly with the familiar aspect of feeble-mindedness which they so frequently encounter, called attention to the need of emphasizing the welfare aspects of feeble-mindedness over and above the problems of mere instruction. Several instances were found of apparently feeble-minded dependent children being boarded out in districts maintaining special classes where it seemed likely that such children might have been taken care of to better advantage in the public institutions of the state.¹

NOMENCLATURE

There is no general uniformity regarding a designation for classes caring for mentally retarded children. Because of the stigma which the public seem to attach to a mental defect such titles as Ungraded Classes, Opportunity Classes and Adjustment Classes have been variously applied and with varying meanings.² It is necessary for some decision to be reached on this subject.

PUBLICITY

There are no data available as to the existence of any organized publicity for the purpose of informing the public either lay or professional in regard to the work of a special educational department.

RESEARCH PROBLEMS

We owe much to the institutions for mentally defective children for their researches and investigations in all phases of activity concerning these children. The laboratory at Vineland Training School has been unceasing in its efforts to increase our knowledge of mental deficiency and mentally defective children. The institution at Waverly, Massachusetts; Letchworth Village, New York; Sonoma, at Whittier, California, have also made notable contributions.

Some of the universities—as Pennsylvania; Ohio State; Columbia, New York, and New York University, have con-

¹ Doll, Edgar A. *op. cit.* pp. 34-35.

² Cornell, Ethel L. *The Function of the Special Class in the Public School.*

tributed, through the researches and investigations of their students, to the knowledge of mental deficiency and mentally defective children.

With the exception of Detroit, Michigan, no city or state has reported research or special investigation in connection with children who are mentally retarded or defective.

This does not necessarily mean that nothing has been done, but that probably whatever has been done has not received the proper publicity.¹

PERCENTAGE OF CHILDREN IN SPECIAL CLASSES

Table 4¹ shows the number of children enrolled in special classes.²

TABLE 4*

PERCENTAGES OF DIFFERENT TYPES OF ATYPICAL CHILDREN IN THE SCHOOL POPULATION FOR WHOM SPECIAL REMEDIAL OR EDUCATIONAL PROVISION SHOULD BE MADE IN THE REGULAR CLASSES, FULL TIME SPECIAL CLASSES OR PART TIME SPECIAL CLASSES

Types of Atypical Children	Number of references	Median percentage	Total for atypical groups	Remedial treatment in regular class	Special class provision
Mentally Atypical	—	—	6 53	—	—
Mentally subnormal . . .	11	4.7	—	—	4.7
Mentally defective ^b . . .	11	0 5	—	—	—
Mentally defective ^c . . .	20	2.0	—	—	—

* Table II from *The Administration of Atypical Classes*. Guy L. Hilleboe, 1929 p. 2, pp. 4-8.

^b Social criterion.

^c Social and psychological criteria.

To quote Dr. Hilleboe:

The median was selected as the measure of central tendency for each type in order that undue weighting might not be given to extreme cases. The mentally atypical children who constitute a total of more than 6 per cent of the school population needing special

¹The question of *prevention* of feeble-mindedness and retardation is covered by the subcommittee on Problems of Mental Deficiency (Committee on the Physically and Mentally Handicapped, IV B.).

²Hilleboe, G. L. *The Administration of Atypical Classes*, 1929. p. 2, pp. 4-8.

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class facilities (Column 3), are the greatest single problem of the atypical group from the standpoint of numbers. The temperamentally atypical group is probably the least important problem in present administrative practice both from the standpoint of educability and of numbers.

The fact that more than 11 per cent of the school population deviate so much from the normal as to require special class facilities and that over 46 per cent, in addition, deviate enough from the normal to make remedial attention in the regular classroom necessary, clearly indicates the importance of the problem as a fundamental phase of the administration of public schools. The author recognizes that the median of a number of unrelated estimates and investigations is subject to grave criticism from the standpoint of statistical procedure and that, at the best, it is but a rough estimate, yet he has been unable to find any single figure which represents the numerical extent of the problem, and, in the absence of such a figure, accepts the median figures presented in Table II¹ in the hope that they will be substantiated or revised by subsequent investigations using comparable definitions and instruments of measurement. The data presented in Table II¹ are subject to further criticism in that boys and girls classified under one type tend to have characteristics of other types. . . . Thus, considerable overlapping would tend to reduce the number of boys and girls for whom special organization is necessary. The fact that in many investigations, standards of classification are lower than are set up here, that in each investigation there is a tendency to miss a few cases, and that borderline children are likely to be classified as normal rather than subnormal, introduces a constant error downward which probably compensates for overlapping of types.

Extent of Provision for Atypical Children. It is also important to know the degree to which school systems are at present providing special facilities for deviates. Table III² shows the actual number being taught in special classes in 18 school systems visited. None of these cities under 50,000 population provided facilities for any type except the mentally subnormal. School systems L and M had completed a partial census of atypical children in the community and expected to inaugurate a program for their education.

¹ Table 4 p. 474 of this Report. Table II from *The Administration of Atypical Classes*.

² Table 5 p. 476 of this Report. Table III from *The Administration of Atypical Classes*.

TABLE 5^{a1}

NUMBERS ENROLLED IN EACH TYPE OF ATYPICAL CLASS AND THE PERCENTAGE EACH TYPE IS OF THE TOTAL ELEMENTARY AND JUNIOR HIGH SCHOOL ENROLMENT

DATA FROM THE SCHOOL SYSTEM VISITED						
City	Total enrolment	Grades	Total number in special classes (a)	Percentage in special classes (a)	Mentally subnormal	
					Number	Per cent
Philadelphia.....	204,723	1 to 8	9,717	4.75	7210 (b)	3.52
Detroit, Mich.....	169,477	1 to 9	6,503	3.84	3565 (d)	2.10
Pittsburgh, Pa. (e).....	81,267	1 to 9	1,249	1.54	1050	1.29
Cleveland, Ohio.....	126,708	1 to 9	11,070	8.74	7971	6.29
Baltimore, Md.....	103,940	1 to 9	2,530	2.44	1316	1.27
Buffalo, N. Y. (f).....	71,629	1 to 8	2,270	3.17	1305	1.82
Rochester, N. Y.....	40,748	1 to 9	1,809 (g)	4.40	1307	3.21
Toledo, Ohio (classes not visited).....	35,281	1 to 8	867	2.46	540	1.53
Trenton, N. J. (classes not visited) (e).....	15,565	1 to 9	338	2.18	338	2.18
Harrisburg, Pa. (e).....	11,883	1 to 9	182	1.53	91	0.77
Lancaster, Pa.....	9,056	1 to 9	81	0.89	81	0.89
Montclair, N. J.....	5,928	1 to 9	298 (i)	5.01	127	2.14
Poughkeepsie, N. Y. (e).....	5,010	1 to 8	90	1.8	90	1.8
Hudson, N. Y.....	2,100	1 to 9	160 (i)	7.61	36	1.71
West Chester, Pa.....	2,100	1 to 9	18	0.86	18	0.86
Summit, N. J. (e).....	1,477	1 to 9	18	1.22	18	1.22
Tarrytown, N. Y. (f).....	875	1 to 9	30	3.43	30	3.43
Arlington, N. Y.....	550	1 to 9	12	2.18	12	2.18
Average (Montclair and Hudson not included).....					2.14	

^{a1} Table III from *The Administration of Atypical Classes*. Hilliboe, *op. cit.*

(a) Speech defectives equated on the basis of one period per week or 1/25 of total number for full time instruction.

(b) Includes restoration classes.

(c) Estimated.

(d) Includes mental defectives, 3177; and special preparatory, 388.

(e) U. S. Bureau of Education Bulletin No. 25, 1928.

(f) Annual report of the State Department of Education, 1928.

(g) Lip-reading pupils equated on the same basis as speech defectives. (a)

(h) Lip-reading one-half hour per week.

(i) Census only, no classes established.

Further information on the percentage of children in special classes is given by the following excerpt from Dr. Wallin's Survey.¹

Minnesota has the largest ratio of pupils in the eight elementary grades enrolled in special classes, namely 1.49 per cent; followed by Connecticut, 1.27 per cent; Massachusetts and Ohio, 1.19 per cent each; California, 0.95 per cent; New York, 0.70 per cent; New Jersey, 0.63 per cent; and Pennsylvania, 0.60 per cent. Wisconsin has the smallest ratio, 0.31 per cent, unless this distinction belongs

¹ Wallin, J. E. W. *op. cit.* pp. 11-12.

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to Missouri, which, however, failed to report the enrolment figure. In proportion to its enrolment in the grades, the most active state provides for about five times as many children as the least active state.

In comparing these figures, however, it is necessary to bear in mind that in all the states except California, Connecticut, Massachusetts, and Ohio only the children in state subsidized classes are included while the ratio of intellectually backward children who are not mentally deficient, and pedagogically retarded children who are neither mentally deficient nor genuinely backward mentally, admitted to the special classes probably is larger in certain states than in others.

WHAT OUGHT TO BE DONE AND HOW

State Laws

Judging from the facts which have been gathered on what has been done in the field of special education for mentally retarded children, the impression is very strong that several measures undertaken for the benefit of these children have proved unwise and that much remains to be done on their behalf. It has been said that a community or state can be judged by the manner in which it cares for its less fortunate citizens. If the introduction of legislation to provide for the education of the mentally retarded will help raise a state above its present moral, social and educational level, let such legislation be guided by underlying educational and economic principles. These laws need to be drafted by skilled lawyers after consultation with leading administrators in every field of education.

No regulatory provisions should be included in the laws; they should be confined to statements of intention and principle. The state department of education should be provided with the authority and the personnel for some form of central leadership, standardization and supervision for all aspects of special education. Discretionary power should be given to the State Commissioner of Education to establish regulations concerning methods of selection and classification of pupils, size of classes, courses of study, teacher qualifications, standards of admission and exclusion, approved meth-

ods and purposes of instruction and any other administrative details necessary to the advances being made in this important field of public education. Such a central division should also be the correlating agency for promoting coordination between the functions of the state department of education and the state department of institutions and agencies on problems of mutual concerns.

A system of better cooperation between public school special classes and county or state institutions for mental defectives needs to be devised. From the public school standpoint there are three general types needing institutional care: (1) the lowest grades who are incapable, after trial, of becoming able to help themselves, without an undue amount of home care which they are unable to receive, as they live in inadequate or vicious surroundings; (2) the defective delinquents living in homes unable to exercise proper control over them; (3) the orphan, neglected or dependent types, who can be maintained in institutions with better advantage than in poorly equipped boarding homes.

The law should also provide for the proper apportionment of educational finances so that special classes for the mentally retarded receive adequate encouragement and support.

Extent of Education

In order to accomplish the ideal of equality of opportunity for all children opportunities must be provided for the mentally retarded to learn how to live completely and successfully on their intelligence levels. Education must be given which will permit them to engage in the work of unskilled labor and live happily in the humblest group. Special abilities should be sought out and developed and, as is the case with all types of handicapped children, the disability should be minimized, not stressed. As life in the world today demands some ability to read, write and cipher for successful living, these subjects should be taught, along with the development of manipulative skill, a sound body and good habits.

With a state department of special education organized and properly staffed, it will be possible to give every child, including the mentally retarded, the opportunity for an education suited to his mental ability whether he attends a rural, town or city school. A certain amount of opposition will inevitably be encountered from those who think that education comes only through certain traditional subjects, but the modern educator has been trained to succeed in spite of obstacles and endless discouragement.

Objectives. Special education in any given city should grow until it is in a position to train and educate all the feeble-minded and subnormal children in that city, including provision for the education of the borderline subnormal children. Many of the borderline subnormal are placed in classes with either the subnormal or the backward children, which is perhaps better than nothing but cannot by any means be considered as adequate provision for this large group of children.

Classes. Any given city or state will probably find that 7 per cent of its elementary school population will need special instruction in classes for the mentally retarded. The definitely feeble-minded will account for 2 per cent, and the subnormals and borderline subnormals (I. Q. of 85 or less) for the remaining 5 per cent. While those in the special education field no longer think entirely in terms of an I. Q. classification, it is used as an aid in identification, and will continue to be so used. It is not, however, to be taken without question. If there are children with the intelligence of 85 or below, as measured by an accepted scale for the measurement of intelligence who can succeed as the average child succeeds, let him proceed in the usual way, but do not wait so long to determine this that a child loses all chance of getting anything from school at all—unless it be a few anti-social tendencies.

Organization. The central department should provide constructive leadership which will be an inspiration to every city, town and hamlet in the state. It should be of direct assistance to those localities and communities who cannot

afford the expense of specialists in the field of special education, but the large cities should have an organization which will adequately provide for the instruction of the mentally retarded children of the community.

The question of special classes versus special schools should be settled locally. In many instances both special classes and special schools will be necessary in order to give adequate training to the mentally retarded. In any event, whatever type of organization is used, it should be considered an integral part of the school system, and children completing the course satisfactorily should receive recognition for that achievement.

The separation of the feeble-minded from the subnormal should be considered whenever possible. At present the children with intelligence quotients of 50 to 70 are educated together regardless of whether they are feeble-minded or subnormal. This separation can only be effected when there are enough sufficiently trained psychologists to do the work.

There should be a definite policy on the part of a community for the handling of the low grade feeble-minded (those with an intelligence quotient below 50). It seems now to depend too often upon whim or political influence.

There must be provision for the education of the physically handicapped, subnormal and borderline subnormal children. It may not be practical or feasible to establish special classes for each group of physically handicapped subnormal children, but it is desirable and practical to have the special education department of a city, or state school system, responsible for making necessary adjustments to provide for the instruction of these groups of children.

Location. Instruction of the subnormal and borderline subnormal children should be given in the division of the school system in which they will be properly placed socially, that is, the young children should be provided for in the elementary school, but the older children should receive their instruction in the Junior High or in the Senior High Schools, or in both of these schools. In the Junior and Senior High Schools the instruction of the subnormal groups need not

necessarily be in special classes but rather by means of special courses adapted to their needs.

Vocational courses in connection with existing vocational schools, or separate vocational or trade schools should be established, to which subnormal or borderline subnormal children could be transferred when they could profit from such instruction. The courses offered should depend upon community needs.

Vocational Guidance Bureau. A vocational guidance bureau, or department of an existing vocational guidance bureau, should be established to help secure suitable work for the subnormal or borderline subnormal children who have been well trained in the schools.

Supervision in Industry. In connection with each special education department there should be some agency which would have for its work that of supervision of the subnormal individuals in industry. This must be done in such a way that these individuals will be helped not hindered by such supervision.

Equipment. The equipment provided, whether it be for a special school, or special courses in the Junior or Senior High Schools, or Vocational or Trade Schools should be adequate for the purpose. In general, much more attention should be given to providing concrete material for both academic and industrial work than is generally conceded, but expensive machinery such as used in large manufacturing plants is not needed. Well trained stable individuals can learn the use of such machinery when placed on the job.

Size of Classes. This depends upon the type of child and the type of class. There is a difference of opinion in regard to the proper size of special classes for the mentally retarded, but twenty-five pupils seems to be a safe maximum.

The *length of the school day* for special class pupils should generally conform to that of regular school children.

Transportation. Local conditions should determine the transportation problem, and local community policies should determine whether or not the carfare of pupils should be paid. Commercial transportation, such as is used by the com-

munity in general is preferable to school coaches as it develops responsibility in the child and accustoms him to conditions that he must face in adult life.

Selection of Children. The selection of the mentally retarded children who are to receive the benefits of special instruction in special classes should be carefully and scientifically made by those trained and experienced in the field. This can be effected best by a child study department headed by an educational psychologist who will have the services of physicians, psychiatrists, social workers and other agencies to assist in determining what is the best type of training for any given child.

Such a department will study all children as they enter school by the best means possible. When something better than group tests is devised, it will be used. Group tests will be followed by careful individual examination on which, together with social and medical findings, the child study department's findings will be based.

The smaller towns and rural districts which cannot afford to maintain their own child study departments will use the services of the division of special education of the county or of the state department.

Subject Matter and Methods of Instruction. The choice of subject matter will depend largely upon the mental ability, physique, social status, length of time in school, and opportunities for employment in the community.

In general, for public school classes, it will consist of a program of work suited to the interests and capacity of the mentally retarded child and based upon: (1) a mastery of elementary school subjects and industrial arts; (2) the acquisition of a robust physique by health education and formation of good health habits; (3) the attainment of good habitual moral responses.

The methods of instruction should be determined by exhaustive experimental study and the instructor should be one well versed in a wide range of methods of teaching all subjects in the curriculum. Short intensive periods of drill and the planning for many opportunities in a variety of situations

necessitating the practice of recently acquired skills are essential to the fixing of the habitual responses in these individuals.

Personnel. To accomplish these purposes, the teachers of the classes and the supervisors of the departments should be well trained and well adjusted people. The salaries will of course depend upon community living conditions. If specialists are required, their salaries will have to be in accordance with their position.

Cost. The present costs vary considerably. In one city the figure is as low as forty-five dollars and in another, as high as \$284 yearly for each pupil. It would seem that both these amounts are out of proportion, therefore an investigation should be made to determine the proper approximate annual cost of training.

It is possible that the true costs will never be determined as the saving accomplished by training the retarded children in the schools, in the matter of lessened expense in the courts and to the social agencies, will not be recorded. All that can be done will be to compare the cost of educating a retarded pupil up to his 16th or 18th birthday to that of educating an average child for the same time.

Appraisal. The employment studies seem to indicate that the education of these boys and girls in the larger cities is fully as effective as that of the normal or unselected type if it can be judged by their success in holding a job in the unskilled and semi-skilled occupations. On the average, they are successful only on the lower wage scale level, but this is only to be expected. Stability seems to be a much greater factor in maintaining their jobs than a comparative better mentality.

Manipulative skill also plays a large part in their success and while not correlating highly with intelligence, does seem to depend more upon scientific training covering a period of years.

The greatest failure in the education of these pupils seems to be in the field of developing good personality traits. A satisfactory adult life, both from the employment and

home life angle depends more upon the ability to adjust easily and happily to new situations than to any other one factor. The ability to get along with others without undue friction needs to be stressed much more than has been done in the past. Another factor needing more careful study is that of discovering and capitalizing special aptitude in the individual boy and girl and providing opportunities for its development.

RECOMMENDATIONS

1. *Nomenclature.* The Nomenclature Committee of the International Council for the Education of Exceptional Children recommends that the term *Special Classes* be used for classes for Mentally Handicapped Children, adding some proper designation, as Primary, Intermediate, Advanced, or Special A, or Special B, as the organization seems to require.

2. *Publicity.* Lack of constructive publicity is detrimental to the special education departments of the cities and states. If a child fails after leaving the special education department the cause is frequently attributed to the fact that he attended a special class. On the other hand, the great number of children who are almost, if not actually, reconstructed through the special classes are lost sight of and an analysis of the true reason of their success is never made. So far the special classes have succeeded in spite of destructive propaganda.

Some definite program should be planned by which the public can be properly informed of what the special education is doing for a large number of children in the public schools. This could be done through a Committee of a Department of Special Education in a United States Office of Education, whose duty it would be to collect and broadcast desirable educational information concerning the necessity of acknowledging individual differences among children and providing adequate educational opportunities for all children, whatever may be their mental ability.¹

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3. *Research.* Everything in this field is as yet quite tentative, and while we must free ourselves from many of the traditional aspects of education in order to succeed in educating the retarded children, still the methods of organization and the methods of instruction for the dull normal children must be critically scrutinized before we accept them. Careful investigation and even intensive research is needed along many lines in the field of special education for the mentally retarded. Among them are such topics as the following:

Appraisal of the work now being done.

Method of instruction in all subjects now taught the retarded children.

Cooperation of special classes, or special class departments with institutions for mentally defective children.

After-care studies.

Best means of accomplishing supervision of the mentally retarded in industry.

Investigations in regard to whether or not all children with intelligence quotients below 85 need special instruction in special classes, in view of the fact that many progressive school systems provide for individual differences in the elementary, junior high and senior high schools.

Best means of educating the public to accept special education for such children who are in need of it.

Cost of education of retarded children.

CONCLUSION

The solution of the problems should be regarded as ever evolving. Better knowledge of the possibilities and capacities of the children of the lower levels of intelligence must come from the continued study of these children and their special abilities or disabilities.

Results must improve as educators become better informed as to what and how to teach these retarded children.

It is most hopeful for special education that so many of the workers in the field are studying to accomplish all this and more. The professional attitude of the workers in special education assures them success. With sincere and intelligent cooperation their success will come sooner.

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BEHAVIOR PROBLEM CHILDREN

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SIGNIFICANCE OF THE PROBLEM

THE proper treatment and training of school children who are known as *behavior problems* is a question of very great importance. The task is one that involves the happiness and welfare of children from infancy through adolescence. It reaches into adulthood and through parenthood and often has its effects upon later generations.

Childhood is the golden age of life, yet countless thousands of children are being blighted by nervous disease, by prepsychopathic, or psychopathic difficulties. Too often through ignorance and lack of care these children are doomed in advance to discouragement, unhappiness, and failure. It is intellectual mockery to congratulate ourselves on the present phenomenal advancement of scientific inventions without soberly reflecting how inadequately advanced are our knowledge and treatment of human behavior.

Although here and there some notable advancements have been made in scientific knowledge through psychiatry, psychology, and sociology, mental disease in adulthood seems to be on a rapid increase. Hospital facilities for mental patients in the United States increased from 31,973 in 1880 to an estimated 264,226 in 1928. They outrank the combined total of all other diseases. It is estimated that at some time in their lives one person out of every twenty-five is affected more or less severely by mental disease.

If the cost of crime and court procedures of cases with mental disease or with advanced symptoms of delinquency are added to the hospital costs already cited, the price will rapidly become more exorbitant than even a wealthy and charitable minded nation can long afford.

It is high time that this problem be attacked concertedly

and with vigor at its very sources—in childhood. A program of treatment and training should be inaugurated which may stem the tide and eventually produce more favorable results.

This Committee feels deeply the importance and gravity of its problem in attempting to outline the larger phases of the treatment of behavior problems in childhood. Fortunately the Committee's personnel included representatives from the fields of school administration, psychology, psychiatry, neurology, and pediatrics, all of whom have found themselves happily agreed on a unified program to which the Committee heartily subscribes.

AIMS AND OBJECTIVES

The aims and objectives of a program for the treatment and training of behavior problem children are presented in the following statements:

1. All cases of behavior problems should be analyzed and treated so that each case, as far as humanly possible, may be happily and normally adjusted to a useful program of social, vocational and economic efficiency. This system of special treatment of individual problems and training of children will relieve the strain and tension which comes from the disturbing influences of these behavior problems in regular schools, in homes, and among playground groups. In the minds of many school administrators and teachers at the present time this aim is considered of paramount importance.

2. There should be a better understanding of the real nature of behavior problems. So-called behavior difficulties among children are the symptom-picture of underlying conditions, the roots of which are to be found in the family life, the economic and social environment of the child, the school situation, and in the biological and psychological aspects of the personality of the individual child. The study of conduct in children is a highly technical matter, the complicated nature of which is little understood or appreciated by educators generally. It demands further study.

3. An important means of treating behavior difficulties

is to readjust educationally the pupils presenting such difficulties and to prevent maladjustment in school learning. To the great number of factors outside of school which cause maladjustment there is frequently added loss of interest and educational inefficiency. Since the school aims to improve character patterns, very meager general improvement may be expected in behavior problems unless the school actually functions, even in the face of tremendous obstacles outside of school.

Status of the Problem

The studies made by Doctor Arch O. Heck under the United States Office of Education, the reports of the personal visits of a member of the Committee, to eighteen of the larger cities of the country, and the data of the Committee's questionnaire, all indicate that the existing facilities for the care of the nervous, the emotionally unstable, and the delinquent are extremely meager. Not over 5 per cent of the cities make special provision to give their behavior problem cases the necessary type of training.

At present there are three types of school organizations that attempt to cater to the needs of these pupils. In the first place, there are twenty-four-hour-a-day schools, usually called parental schools or parental homes. The state industrial schools are of this type, but as a rule care for the more severe offenders, those who cannot be helped in the local parental schools or homes.

The second type of organization is that of a special day school to care for truants, incorrigibles or special behavior problems. Such schools have been established in a few of the larger cities, the Thomas A. Edison School for Boys of Cleveland and the Montefiore Special School of Chicago being the best examples. The first school of this character in the United States was established in Albany, New York, antedating the ungraded classes of New York City by over a year. Scientific study of such cases, however, was not provided in Albany until 1913, and such provision no longer exists in Albany.

The third type of school organization found at present is the special class for discipline, truant or incorrigible behavior cases. This type of class is operated in connection with some regular school, but has special work and an individual program.

In addition to these three types of organization, some of the larger cities now maintain clinical or adjustment services to help care for behavior cases. Such service, however, should be a part of every school's program no matter what type of school organization—parental school, special school or special class—is also used.

State laws provide for the establishment of 24 parental schools in Illinois, Pennsylvania and California. The Illinois law was passed in 1890 and led to the establishment of the Chicago Parental School, the first of its kind, in 1902. According to Heck's study¹ made in 736 cities of over 10,000 population, only 23 cities have considered it necessary to establish real parental schools. Certain cities have schools maintained in detention homes, and there are other private or semi-private institutions which deal with behavior problems. A few cities have separate parental schools for boys and girls. Chicago, Cleveland, Cincinnati and St. Louis maintain two institutions, one for boys and the other for girls. The average enrolment of these various parental schools is about 80, with approximately one teacher for every 30 pupils. Of the cities reporting parental schools in Heck's study, over half have a population of over 500,000 and over three-fourths of them have a population of over 100,000. The results of the Committee's questionnaire also indicate that parental schools are maintained only in very large cities as none of the cities under 100,000 in population reported any.

Dr. Heck found in his study that 16 cities, all over 50,000 population, reported having special schools for behavior problem children. However, some of these may be schools for subnormals as well as for behavior cases, because Stull-

¹ Heck, Arch O. *Special Schools and Classes in Cities of 10,000 Population and Over in the United States*. Washington, D. C., Govt. Print. Off., 1930.

ken, in his visits, found that only 7 cities really had such special schools. The Committee's questionnaire disclosed that 7 cities, all over 100,000 in population, had behavior schools. These data indicate that there is little provision made in the larger cities toward the establishment of special schools for behavior cases and practically none in the smaller cities and rural communities.

TABLE 1
SPECIAL SCHOOLS AND CLASSES ^a

Number of cities above 10,000 in United States	762
Number of cities reporting	736
Number of cities having disciplinary schools	16
Number of schools established	26
Number of classes in schools	186
Number of pupils in schools	3,512
Number of separate disciplinary classes	88
Number of pupils in just the classes	1,950
Number of classes (total)	274
Number of pupils enrolled (total)	5,462
Number of teachers (full time)	285
Number of teachers (part time)	15
Number of helpers (full time)	18
Number of helpers (part time)	9

^a Figures taken from *Special Schools and Classes in Cities of 10,000 Population and More in the United States*, by A. O. Heck, Office of Education Bulletin, 1930, No. 7, Washington, D. C. Govt. Print. Off., 1930.

There are more special classes for behavior problems than special schools. From replies to the Committee's questionnaire, behavior classes were reported in one county, one city under 30,000 population, one city between 30,000 and 100,000 population, and 15 cities over 100,000 population. Heck also found that 16 cities over 10,000 in population had 26 disciplinary schools and that there were 43 cities providing either disciplinary schools or classes, or both. These schools and classes enrolled 5,462 children and there was one teacher for approximately every 19 pupils.

The results of a questionnaire issued in September, 1929, by the Department of Research of the Denver Public Schools ¹ disclosed that there is less provision made for girls

¹ Educational Research Service, Department of Superintendence and Research Division, Washington, D. C. National Education Association Circular No. 6, May, 1930.

than boys. Only 5 out of 23 large cities maintained discipline classes for boys and only 3 maintained such classes for girls. There are no such schools maintained for behavior problem girls and only a few special classes for boys. Doctor Clinton McCord, a member of this Committee, in a study of conditions in Trenton, New Jersey, found that approximately 4.8 per cent of the 18,519 school children in the Trenton system were *problem children* and in need of special services. Surveys conducted by Committee members in Detroit and in Chicago indicate that approximately 1 per cent of the school population are such active problem cases or are so delinquent that they are immediately selected by their teachers and principals as being in need of special study because of behavior difficulties.

While there is some provision made by a few private and semi-private schools (some of them being college preparatory schools having psychiatric or mental hygiene service) the problem of the behavior case as a whole has been largely neglected, and it is only recently that the educators have in any way tried to meet it with provisions for special education.

WHAT SHOULD BE DONE

That the present facilities for special education for the nervous, the emotionally unstable and the delinquent are inadequate is certain. Although there is not much information available with reference to the situation in the smaller cities and communities, enough evidence has been collected from larger cities to prove that the number of pupils requiring special training because of behavior problems far exceeds the number now receiving it.

The establishment of special schools and special classes should be greatly increased in order to meet this need, together with an increase in the diagnostic and child study facilities of all school systems. Child guidance clinics (such as are maintained by Minneapolis, Minnesota, and Newark, New Jersey) and psychological child study departments (similar to those established in Detroit, Los Angeles, and

Chicago) can do much toward meeting the problem. Public school systems can increase their medical, psychological and social services and depend upon the expert advice obtained as a means of helping the educator overcome the difficulties of special problem children. Other methods which would materially help to solve the problem are as follows:

1. The establishment of clinical centers, such as the Student Guidance Center maintained at the Sullivan Junior High School of Chicago.
2. The assembling of medical, dental, psychiatric, psychological, and social services, such as are centered in the Montefiore School of Chicago.
3. The establishment of welfare centers similar to those found in Los Angeles.

There are obviously a few cities and school systems which are making real headway in the treatment and training of behavior problems and these point to a bright future if their example may be followed.

EDUCATION AND TRAINING

Nature of Problems. This section deals with the nature of behavior problems with regard to incidence, age, sex, nationality, and race. It will also consider the nature and causes of behavior problems arising from within the children themselves and, finally, the agencies which are most concerned with the selection of cases.

The report is not intended, in any sense, to be a complete guide to educators or to child guidance clinics, but will only attempt briefly to mention and sketch some of the grosser tendencies or situations. Its purpose is to give suggestions as to what agencies are necessary for complete investigation of behavior problems; agencies are expected to furnish detailed information.

Incidence. Surveys of behavior problems show considerable variation in the percentage of the school populations which may be considered as needing behavior adjustment.

Where careful surveys have been made by mental hygiene clinics in such cities as Trenton, New Jersey and Cincinnati, Ohio, they show that approximately 5 per cent of the children may be classed as behavior problems. On the other hand, according to recent surveys conducted in Detroit and Chicago public school systems, if the listing of children who are known to be behavior problems at any particular time is left only with the teachers and principals, approximately 1 per cent of the total number of children are reported. In view of these differences in percentages, due to the various methods of approach, it would appear from a conservative estimate that approximately 3 per cent of all children stand in need of readjustment as to behavior or incipient behavior difficulties.

Variation in the percentage of cases will be found from city to city, depending upon the general nature of the city population, the industrial or cultural level, and the size of the community. Some small cities with very stable populations could easily have less than 1 per cent of behavior problem cases, whereas it would not be surprising in certain large cities, with exceptional conditions of poverty and unemployment, and having an unusually high incidence of crime, to find 10 per cent of their children maladjusted from the standpoint of behavior. Therefore, although 3 per cent is probably a fair general estimate, each community will have to determine the incidence of its local situation.

Age. Actual statistics with respect to the age of behavior problem children are also rather inadequate. The records of the Minneapolis Juvenile Court show that the median age for the cases requiring court attention is between fourteen and fifteen years. Doctor Willard Olson in his work in Minneapolis found that behavior difficulties among school children started most frequently between the ages of thirteen to fifteen years, but that many of these difficulties could be noted in earlier grades, even in the kindergarten and primary grades. In June, 1929, a survey, or listing, of behavior cases was made in the elementary school grades from the kindergarten to the sixth grade in Detroit, and a range of

ages from five to fourteen years was actually found, with a fairly uniform distribution of cases from ages eight to twelve. The records of the Cleveland Child Guidance Clinic show that over one-half of their behavior cases are between six and twelve years of age. Where public school systems have established either schools or classes for behavior problem cases, they are usually limited to boys from about ten to sixteen years of age, and the median age in these schools, particularly the Thomas Edison School in Cleveland, the Montefiore School in Chicago, and the Clay School in Detroit, averages about fourteen years.

Before any final answer can be given to the question of the age of behavior case children, many more surveys must be made, not only by teachers and school administrators but also by clinics which represent the fields of psychology, psychiatry, and pediatrics.

Sex. Surveys of behavior problem cases in the Detroit and Chicago Public Schools and in the Cleveland Child Guidance Clinic, show that approximately four times as many boys as girls are reported as behavior problems. It is suspected, however, that many cases of personality maladjustments of girls are not detected or recognized as such by school systems, which explains the apparent discrepancy in the ratio.

Nationality and Race. Studies in Detroit and Chicago and the results of the Committee's questionnaire indicate that approximately 30 per cent of the behavior cases are colored and 70 per cent are white. Colored children are more apt to become behavior problems than white children. The records of the Montefiore School of Chicago and the Thomas Edison School of Cleveland indicate that the colored groups and the Polish and Italian groups furnish about one-half or slightly more of all the problem cases that have been transferred to these schools. Court records in most northern cities indicate that these three groups produce more juvenile problems than other groups. In view, however, of the very inadequate data obtainable, it would be hazardous and unfair to single out any nationality or group. Children who

become behavior and delinquency problems in large cities seem on the whole to be recruited from certain types of poor or deteriorating residential districts irrespective of the race or nationality group which may be residing there.

Causes

In some of the large cities certain types of behavior cases are being identified and selected for study in accordance with the recognized techniques in psychology, psychiatry, sociology, and education. However, in these centers the program of selection of cases and diagnosis is still more or less tentative and experimental, and handles only a fractional part of the local problem. In small cities, towns, villages and rural districts the problem is practically untouched.

The selection and diagnosis of cases is recognized to be a baffling problem with an almost hopeless interrelating of causes and effects, so that any generalized statements applied to behavior cases in groups are not only difficult to formulate, but are of very doubtful value when applied to individuals. However, it is encouraging to know that thorough diagnosis of individual cases usually brings to light the particular combination of factors peculiar to any individual child. The individual method of diagnosis may eventually lead to a complete knowledge of the psychology of behavior patterns which can be applied in large numbers to new cases.

Classification

Cases of behavior difficulty may be divided roughly into three general classes: the nervous; the emotionally unstable; the delinquent. Each of these classes will be considered briefly, and each has both an intrinsic and an extrinsic aspect which should be considered. Before this discussion is undertaken the interrelationship of these cases should be mentioned. A behavior case may have a fundamental nervous disease such as chorea, which is characterized by lack of control of physical, mental, and emotional powers. The emotions are naturally disturbed, and the child becomes restless

and inattentive in school and at home. With unintelligent treatment either at school, at home, or on the playground these external behavior manifestations may develop into delinquent tendencies, which are due partly to the environment and in part to the inherent nervous disability. If these conditions are not changed and arrested, they supplement and augment each other in a vicious and ever-widening circle. This phenomenon indicates how truly difficult it is to divide cases into distinct and separate categories with mutually independent causes. However, with these limitations in mind a brief discussion will be offered of the three types mentioned above.

The Committee recommends that all nervous, emotionally unstable, and delinquent children should be studied as a group under the practical caption of *behavior problems*. With certain nervous children it is recognized that although they could not be justly classed as actual behavior problems, yet they are likely to become maladjusted at any time. Likewise delinquent children may not be nervous or emotionally unstable but an analysis of their maladjustment may lead to some potential physical or emotional cause.

The Nervous. Children suffering from chorea, speech disorders, encephalitis lethargica and general nervous disability should be included in this class. While it may seem very unusual and incongruous to mention these types under behavior, yet many of these children who are unable to control themselves are considered behavior problems by teachers who may not be aware of their true status. Naturally it is futile merely to accuse teachers of negligence in such instances, since there is urgent need for a much more comprehensive training of all teachers, in order to recognize the grosser symptoms of nervousness, provide facilities for medical treatment, and exercise the proper control during the period of convalescence. However, it is also admitted that there are some types of nervous children which it is impossible to handle in a regular classroom. The toll of excellent teachers who have been discouraged and driven

from the profession of teaching because they tried to accomplish impossible tasks will probably never be known. Until better conditions exist, teachers and principals are urged to take a more charitable and scientific attitude toward behavior problems in children which may have an organic nervous basis. Present conditions point clearly to the necessity for better periodical physical, mental and neurological examinations of all children.

The Emotionally Unstable. The same suggestions apply to children who are emotionally unstable. These cases vary from mild emotional imbalance, through cases of definite psychoneurotic and prepsychotic behavior, to confirmed cases of advanced mental disorder. Many of these mild cases create behavior disturbances in school over which they themselves have little volitional control, but which are frequently interpreted as deliberate disobedience. These cases are often much aggravated by the unintelligent and therefore unjust treatment which they receive.

The Delinquent. Both of the types mentioned above, the nervous and the emotionally unstable, constitute a large majority of the total number of behavior problems. The third group is known as the delinquent. In the public mind these cases are looked upon as due to the influence of a poor home, a bad gang, poverty, and a host of similar causes. Although they seem to have some obvious external cause, in many instances they are also complicated by emotional instability and may more properly belong to that classification group. The field of education and social service has an important function to perform in the education and training of delinquents both inside and outside of regular school hours and activities. There can be no attempt made here to list or describe each type of delinquency, its possible psychological implications, or the probabilities of correction or cure; only the general nature of the field can be indicated. Again it should be emphasized that the causes of malbehavior are numerous, interlocking, and very difficult to apply to groups of children. Individual case study will continue to be the method of approach and diagnosis.

The Child With Two or More Defects. There is a fourth type of behavior problem which has not been adequately covered by the threefold classification already mentioned, that is, children with two or more defects, or with one major physical, sensory, or mental defect in addition to behavior maladjustment. In many instances the primary defect, possibly physical, has led to behavior difficulties in the same manner as with nervous children. Their treatment is often very difficult because of lack of educational facilities designed to serve two types of disability simultaneously.

Inadequate education is one of the causes of delinquency. Schools have always been intelligent and well meaning and there is little excuse for the malpractices which have obtained in the past and which continue to operate to some extent. There is not only a general lack of understanding of behavior cases but the educational program itself is also at fault. Behavior children as a group are dull or slow mentally, the average I. Q. being about 85. Dull children have been subjected to standards of education which were originally devised for individuals of higher intelligence. These standards are much beyond their capacities. Under these circumstances dull children have been allowed to fail, to become over-age for their grade, and to leave school after being seasoned to failure, to feelings of inferiority, and with no vocational guidance or training. It is little wonder that they have drifted into delinquency both in school and out. More recently schools are becoming aware of the range of individual differences in children but adjustments of curricula are not keeping pace with the psychological knowledge of these children. Until courses of study, methods of instruction, and teacher-training programs are adapted to all extremes of individual differences, the schools will continue to precipitate behavior problems. The excuses on the part of the schools, as to traditional practices, to the relatively small numbers of bright or dull pupils, the time and study needed for writing suitable courses of study of textbooks different from those for normal children, the difficulties of administer-

ing teaching groups, must be swept aside in meeting the challenge of behavior problems for which the schools themselves are partly responsible.

The discussion thus far has shown that there is at present for the most part a narrow point of view regarding urgent cases of malbehavior, with little understanding among teachers as to the basic psychology. The futility of such procedures, not only in failing to correct behavior but also in the psychological effects upon the cases themselves, leaves much to be desired. Unhealthy mental attitudes are fostered in children who are unjustly accused and reprimanded for faults beyond their control.

In attempting to describe what should be done it is logical to recommend that the entire program of mental hygiene and physical welfare of children be closely allied with the present field of maladjusted children. All types of behavior children are not brought into evidence, for only those acts which are irritating or disturbing to the home or school are reported as behavior problems. Many children who are shy, timid, retiring, quiet, are actually anti-social and later may develop into mental disorders of the schizophrenic type. They need, very seriously, a constructive program in mental hygiene yet frequently they go entirely undetected throughout their childhood and school career. Certain children live in home environments which are hotbeds of vice and crime, yet they may not seem to be contaminated during their school life. In fact, through the elevating influence of the school they may counteract delinquency but succumb to it after leaving school. Such cases find school a happy haven from sordid homes and consequently may not give way to any outbursts of anti-social behavior in school. However, they should be detected, identified, and trained in mental hygiene, or disaster lurks in the future. This suggestion may seem to be borrowing and begging trouble unduly, but when the later consequences are realized, the need of such a program becomes extremely important.

Therefore, not only the extreme and patent cases of be-

havior but also the subtle and hidden cases should become subjects for investigation, study, and treatment.

In attempting to put these programs into effect, there are two problems which must be met: (1) to outline the necessary diagnostic and corrective procedure which will handle the problem adequately in communities of various sizes and constituencies; (2) to present this procedure to schools and allied agencies with definite recommendations as to procedure, in order that the programs may be effectively initiated and carried out.

Selection of Cases

The selection of cases properly falls into two general groups: Selection by staffs consisting of psychologists, psychiatrists, pediatricians, physicians, neurologists; selection by teachers, principals, attendance officers, parents, social and welfare agencies.

The types of cases which may be selected may differ radically from one another in their general constitution. The chief difficulty lies in inducing these selecting agencies to accept and respect one another's opinions. For example, the pupil who disturbs the teacher by restlessness and constant whispering may be found by the expert examining staff to offer no fundamental psychological or psychiatric problems. Nevertheless, such a case may be a real problem to a teacher and the expert examining staffs should make some practical suggestions for improvement. On the other hand, the child who is quiet and of retiring personality may be a serious potential case in the opinion of the psychiatrist and yet, by reason of causing no disturbance in school, will be considered a model child by his teacher. It is highly important that all these agencies work very closely in accord and understanding.

By Specialists. The study of conduct in children is a highly technical matter which if it is to be of any value must be developed by people with a background of training and special experience much more extensive and specific than the

training of teachers or school administrators. Educators must accept the fact that they are pedagogues primarily, that they are not physicians, psychologists, nor psychiatrists. They must be willing to call upon these specialists in the same way that they would call upon a surgeon in a case of physical difficulty. They must not be misled by the fact that behavior disorders in children are linked with situations familiar to them as teachers nor must they believe that the diagnosis and treatment of such conditions is a simple matter, the technique of which they can acquire by a summer course or a two weeks' course in parental education.

The examination, diagnosis and prescribed treatment should be made by the various specialists but should be couched in simple enough terms and with a uniform and consistent recommendation, so that the agencies of correction may carry out the program which is recommended.

By Teachers, Parents, and Others. Teachers, principals, attendance officers, parents, social and welfare agencies will probably be more concerned with those cases which offer a disturbance to the school administration and the routine of instruction and similar school offences. Although the scientific examination may disclose no basis for diagnosis or study, the scientific staff should set up general preventive programs in practical terms which teachers and lay educators may be able to interpret and apply in the correction of minor difficulties. No system of selection can ever afford to ignore the complaints and cases referred by these agencies, particularly the classroom teachers, who, by serving daily in the "front line trenches," are at least vividly aware of certain types of behavior problems.

The importance of a program of training for all classroom teachers and other interested agencies to equip them to deal with these problems is a matter of great importance and will be discussed in later sections of this report.

ORGANIZATION AND ADMINISTRATION

Types of Special Segregation

The organization of special classes and special schools for behavior problem children differs in various cities. In the larger cities they are usually organized as separate units in a department of special education. New York, Detroit, Cleveland, Philadelphia, and Chicago have typical examples of such organizations. In Los Angeles they operate to a great extent under the Division of Psychology and Educational Research. Welfare Centers in Los Angeles, however, are more closely allied to the Division of Attendance.

Parental Schools. Twenty-four-hour-a-day schools are usually operated as separate institutions, the heads of these schools as a rule reporting directly to an assistant superintendent rather than to a department head. Quite often they have a divided allegiance as between county and city administrations. State industrial schools are of course maintained and directed by state departments rather than any local governing bodies. Parental schools are usually organized on the cottage plan, 30 or 35 boys to the cottage, with a family instructor and wife in charge. The cottage type of organization is an attempted compromise between an institutional and a home unit plan of caring for pupils. Nearly all of the parental schools are located on farms, so that the farm work may afford opportunity for outdoor activity and also help to contribute to the school's financial support. Food is either prepared in the separate cottages or in a central kitchen, preferably the latter, and is then distributed to the different cottages, and in the case of the more up-to-date plants, through underground tunnels. All parental schools make some provision for the recreational side of the pupil's life and for school work. The New York, the Philadelphia (Shellcross), and the Chicago parental schools have excellent central school buildings able to accommodate all of their pupils. The school work follows the regular courses as closely as possible, usually too closely, and also provides for

more handwork. In some schools the pupils spend part of the day in class and the other part on the farm, while in others all pupils of school age have the regular scholastic hours with small tasks assigned before and after school.

Special Schools for behavior case children (there are only a few) are usually located in some regular school building which has been remodelled to cope with its new functions. The Jacob Riis School in Los Angeles and the Daniel Boone School in Philadelphia are housed in new buildings. The Thomas A. Edison in Cleveland, the Clay in Detroit, and the Montefiore in Chicago have old buildings which have been remodelled. These special schools must of necessity be located where excellent transportation facilities are available.

The work of the special schools is usually divided between regular academic work and shop or other similar activities, such as woodwork, weaving, basketry, mechanics, metal work, mechanical and freehand drawing, elementary sciences and, where conditions permit, gardening and animal husbandry. The Montefiore School of Chicago also offers many clinical services for the treatment of the pupils; it provides a doctor, a nurse, a part-time psychiatrist, a dentist, with well-equipped offices, social workers, and a full-time psychologist.

Special Classes. Where these are organized to care for behavior cases, they are usually housed in regular schools and receive a part of the regular principal's time and energy. Often, however, a special supervisor exercises more supervision over them than the building principal. Special classes attempt to give special work but are not able to offer as many features differing from the regular schooling as do the special schools. The equipment of a special room is often limited and while the program may be more flexible than that of a regular room, it cannot meet the needs of pupils as fully as the special school is able to do. Special rooms are used in smaller cities and in sections of larger cities where the need for a special school is not great enough to demand the services of an entire plant.

The classes reported in the returns to the questionnaire of the department of research of the Denver public schools ¹ average 19 pupils per teacher. Heck,² in his study, found that the average number of pupils a teacher for all disciplinary classes is approximately 19. The results of a questionnaire indicated an average of approximately 18 pupils a teacher with classes in the cities over 100,000 slightly larger than those in the smaller cities.

Approximately one-half of the special classes and special schools have a school day of regular length. The other half are equally divided between a day that is shorter and one that is longer. Transportation is usually provided for all pupils who must travel distances greater than a mile or a mile and a half to reach the special school or class. The transportation used in nearly all cases are regular street cars. Provision is also made for the noon-day lunch but is often furnished free to the pupils, although many schools furnish food at cost or even somewhat below cost.

Separation of Classes. The first problem concerning the organization of special classes for behavior cases is the complete separation of the nervous, the emotionally unstable, and the delinquent from other special divisions, especially such as the subnormal. The results of the Committee's work clearly indicate that in many cities no definite and careful distinction has been made between special schools and special classes for behavior cases, and those for retarded and subnormal cases. Children may well be subnormal as well as delinquent or nervous or truant; since, however, subnormality or feeble-mindedness is a basic defect which cannot be materially changed, such cases should be kept apart. Nervousness, delinquency, truancy, and misbehavior may be only symptoms of some underlying defect not related to defective intelligence; therefore, such cases should not be placed with the subnormal or feeble-minded.

¹ Education Research Service, Dept. of Superintendence and Research Div. N. E. A. Washington, D. C. Circular No. 6 (May, 1930) p. 12.

² Heck, Arch O. *Special Schools and Classes in Cities of 10,000 Population and More in the United States.*

These perplexing problems show the need for special classes or schools for children with two defects: one, behavior; the other, some physical, sensory, or mental disability. These cases will never be adequately handled until special teachers are trained to handle both defects, such as vision defect and behavior. At present there is a tendency to pass these urgent and complicated problems from one department of special education to another, many times leaving them in "no man's land" in the face of very serious maladjustment. These conditions must be speedily remedied, for much caustic criticism of education is really centered about a few of these serious cases for whom no one takes full responsibility.

In the first place, provision must be made for medical, psychiatric, psychological, and social services. Where the city is a large one a department of child study may be organized, in which all of these services center, and in smaller places, specialists can be employed. This latter type is usually more economical, and certainly more adequate than depending upon outside clinics for free expert service. A form of clinical or adjustment service organized as a traveling clinic, may be desirable in smaller cities and in rural communities for furnishing the diagnostic services needed to enable a school system to locate properly its problem cases.

Any classification of behavior cases depends upon careful study and upon applying case methods of study to the pupils involved. Therefore, provision must be made for administering and organizing means of keeping records of all children in the system. Individual folders containing case histories of all special behavior cases must be kept. The child "as a whole" must be studied and this can only be done where a summary of the work of all the diagnostic experts has been brought together and made available for study, either in some center for child study or in a well-organized classification clinic.

In addition to the diagnostic or classification service required, special provisions must also be made for the education of many of the behavior cases. While there are wide

differences of opinion as to the value or desirability of segregation, the objections to special classes and special schools are easily offset by the advantages of intensive study and treatment which the segregation obtains. In the larger cities of the country twenty-four-hour parental schools will be necessary for some time to come, but children should be placed there only when, after careful study, the experts mentioned above have indicated that such institutional care is desirable. Mental defectives and hardened young criminals should not be placed in this school. Cases of pupils who are habitually truants, developing into delinquents, and whose home conditions are bad, with parents lacking both interest and ability to aid their children, should usually be sent to a parental school. However, if home conditions are better, then such cases should be placed in a special school or special class where extra work and extra services may, if possible, save them for return to regular classes at a later date.

Special classes and special schools may be organized as welfare centers where pupils may be studied pending definite placement in institutions, regular classes, or special schools. These schools might profitably conduct proper recreational activities until nine o'clock in the evening to keep these children off the streets and out of much mischief and potential crime. In small communities where special classes or schools are not feasible, the adjustment facilities must be entrusted largely to the examining and consulting staffs. The staffs in small communities and in larger cities should be efficiently organized and administered so that maximum effective service may be offered.

Nomenclature of Schools and Classes

The surveys indicate that throughout the country there is no uniformity in the names applied to special educational facilities for behavior problem cases.

This applies to all types of special instruction, but being the latest and least developed, the behavior problem classes have a wider diversity of titles than other atypical groups.

The twenty-four-hour schools are sometimes known by names such as Shellcross at Philadelphia, Glenview School at Cincinnati, but more often they are called by such terms as *parental school*, *parental home*, *industrial home school*. Many of the larger cities, of course, have detention home schools which, however, are not really special schools for delinquents or behavior cases but merely places where children are detained while awaiting a permanent placement. State schools are usually called state training schools.

The *special schools* are sometimes named or numbered like the regular schools, for example, Montefiore in Chicago, Clay in Detroit, Jacob Riis in Los Angeles, Thomas A. Edison in Cleveland and Public School No. 174 in New York City. Such names as "boys disciplinary day school," "special school," "probationary school," "welfare centers," "junior trade or vocational school" and "opportunity school" are also used.

The *special classes* also have a wide variety of designations. Some of those more commonly used are "ungraded classes," "disciplinary classes," "special disciplinary classes," "orthogenic disciplinary," "adjustment classes," "opportunity classes" and "industry classes."

There is no doubt that many of these terms carry a stigma attached to their use which handicaps the effectiveness of the work of the special groups.

Greater uniformity is desirable. The terms used should also clearly indicate the fact that special work is provided and should differentiate the class from other special groups. For twenty-four-hour schools the best term no doubt is "parental school" or the use of some name such as "Glenview," "Shellcross" which has local significance.

Special behavior schools should be known by the name of some specific school such as "Montefiore," "Clay," "Edison." While from the standpoint of the individual pupil no special name is necessary for a class for a behavior group, yet school administrative procedures will be benefited if special classes are designated as such in reports, budgets, and so forth. Therefore, the term *adjustment class* is suggested

as one that be uniformly applied to all special classes for behavior adjustment groups.

In order that uniformity be secured it is suggested that groups of school administrators, sections of the National Education Association, the United States Office of Education, the various state teachers associations, and the various state school departments be appealed to as a means to securing a uniform terminology. Various teacher training institutions in their regular class and also in their extension work can help. It is also suggested that all groups interested in the White House Conference agree to a uniform terminology for all special classes, for all atypical groups of children, and that all lend their influence toward securing the adoption of the nomenclature which is recommended.

Segregation

The question of the segregation of behavior problems into special classes or schools is one of the most baffling, many-sided, and controversial issues in the entire field of treatment and training. Unless some more harmonious agreement can be reached than obtains at present among the various agencies, clinics, and school administrators, the entire program of treatment and training is certain to be greatly hampered and embarrassed. This Committee, representing several different phases of treatment and training, are quite well agreed upon the principles and ideals presented in this section of the report and trust that similar harmony will prevail elsewhere.

The Committee's report endeavors here to present the evidence on segregation, pro and con, and to discuss all the phases as clearly as possible.

Advantages. The argument for special segregation is less logical than in the case of blind, deaf, or crippled children, since with these defects the disability is relatively more permanent and the training is not built upon expected permanency but upon the hope of eliminating the defect itself. Under these conditions, association with normal children for

the imitation of correct and desirable models seems theoretically desirable. In fact, the psychiatrist, psychologist, or family physician frequently insists that individual problem cases under their treatment be allowed to remain in regular schools, no matter how seriously they disturb the routine of the school program. Obviously, special schools must be able to show results superior to regular grades if the support of these private but influential agencies is to be secured. The chief argument for segregation of behavior problem children at the present time is that special teachers, diagnostic and remedial clinics and agencies may be concentrated on segregated groups much more effectively than can be done on isolated cases in scattered schools. Finally, each case is so highly individualized that the possible dangers of further anti-social infection are scarcely more than a theory.

The unfortunate attitude sometimes expressed by a few school administrators that they can handle all their behavior problem children by strict discipline is a further factor detrimental to segregation and to intensive study of actual cases.

Disadvantages. The specific arguments against segregation by these agencies are that contacts with other delinquent children foster and engender more behavior delinquencies, and a serious stigma is attached to such special classes similar in nature to a prison sentence on adults. Undoubtedly these charges might be proved against some of the special classes or schools now or in the past, but the more progressive special schools are handling the administration of their schools so effectively that these arguments are not valid except in rare individual cases. Not long ago it was learned that the mothers of a special class of young behavior problem children were at first violently opposed to the special class but later freely admitted that the children were improving much more than in the regular grades.

Transportation problems and small numbers of cases in certain areas are probably more effective barriers to special classes than any of the points mentioned.

Another argument against segregation is that with better training and attitudes on the part of all teachers no child

should necessarily be removed from any regular class on account of behavior. This is an ideal toward which teacher-training institutions fondly look, but it will be some years, if ever, before such a Utopia will be reached. The special training necessary for teachers is almost beyond the resources of any normal school. On the other hand, a few special teachers may be trained to handle behavior problems and thus get the program under way with very little delay. Although regular teachers are steadily becoming better trained each year, the increased teaching load tends to work against much active and effective individual work. Any pupils who do not adjust into the régime must be handled by special segregation.

In small communities the problem will have to be met largely by intensive individual treatment of pupils who must remain in regular grades, and further light will be thrown on the possible effectiveness of non-segregation.

The Committee does not wish to appear as approving of special segregation merely for the sake of segregation, and unless much more effective means of treatment and remedy are available by this method than otherwise, there is no argument in its favor.

It is believed that more rapid immediate progress will be made in the next few years by special segregation, particularly in the large cities. This statement applies to more serious cases. Mild cases should be adjusted in regular classes as far as possible but in accordance with the needs of the individual child. Some plans for immediate relief need to be suggested and special classes and schools properly organized and staffed will provide such an agency and can be put in operation upon comparatively short notice.

COSTS OF SPECIAL EDUCATION

The cost for the diagnosis, treatment and training of behavior problems far exceeds the costs for normal children in regular schools. In fact, when the problem of cost is considered many school systems are reluctant to under-

take the program which is necessary for behavior children. There are several phases of special education for behavior cases which must be considered in a more general way than the immediate expense of individual cases:

First. In computing the costs for special education it is assumed that all of the expense of clinical and diagnostic service, as well as the usual education, should be charged to the costs of treatment and training. If the program of training is effective, these costs will eventually be deducted from the expense which society otherwise may eventually have to bear for crime and delinquency or the care of patients in mental hospitals.

Second. This problem of educational expense must be thoroughly understood by all the agencies of the community in order that it will not seem to represent the attempt of one community agency to greatly expand its work without reference to the entire situation. This program must be accepted by all agencies as a preventive measure against needless expense and unnecessary duplication.

Third. It must be emphasized that, if this problem is thoroughly understood, it is likely to involve a greater total expense to the community for the next decade or two than should obtain after that time. The reason for this is that in addition to the educational costs, the present agencies dealing with adults must continue to carry their burden until a better preventive program for children has had time to operate into the adult levels.

Fourth. The entire program of treatment and training of behavior problem children should be undertaken vigorously and optimistically in the face of the situations which have just been described. Although no one can absolutely guarantee or foresee the final trend of costs, the program must be undertaken for the sake of maladjusted children now in schools and with the hope that the ultimate lessening or shifting of expense to prevention will take place.

At the present time the city of Detroit is spending \$137.29 yearly per capita for pupils in special classes for

delinquents and truants. Chicago's classes for truants and behavior cases cost approximately \$250 yearly for each pupil. The costs vary in different cities depending upon the amount of service and special attention that is given to pupils in behavior classes. A safe estimate would possibly be that these special classes will cost two and a half or three times as much as classes in regular elementary schools. The research study made by the Denver Public Schools¹ indicates that the cost in disciplinary or behavior schools varies from \$137 to \$741 yearly for each pupil, averaging yearly for the eight cities reporting \$230.98 for each pupil.

Cost for education in twenty-four hour parental schools is, of course, very much higher when the board and keep of pupils is considered. Possibly \$700 yearly would be required to give proper care to a child in such an institution.

The final statement of costs cannot be made until suitable diagnostic agencies are set up in the school systems and their case load determined. Within the special classes themselves there must be standardization of courses of study, materials, equipment, teaching load and the program which the schools must undertake outside of the usual school hours. These factors will naturally vary from community to community and must be set up in terms of each local situation.

Methods of Financing. The method of financing the educational costs is a matter of supreme importance in the treatment and training of behavior children. The costs which have just been discussed and their significance and relationship to the entire problem of society's welfare show that it is a greater burden than local school systems can be expected to undertake immediately without definite financial aid as well as the moral support and cooperation of other agencies.

Within the past few years liberal provisions have been made and are still being made by privately endowed agencies and public-spirited citizens, for research on these problems, and in some cases for programs of treatment and cure.

¹ Educational Research Service, Dept. of Superintendence and Research Div. N. E. A. Circular No. 6 (May, 1930) Washington, D. C. p. 12.

In fact, the great bulk of work which has been done has been due largely to these sources rather than to the active participation by school systems and other interested public agencies. While it is to be hoped that such support will continue in the future, these sources can hardly be expected eventually to bear the educational burden. It must ultimately be taken over in large part by public support, particularly after the programs have emerged from the experimental stage and have become fairly well standardized.

There will possibly be greater harmony in the matter of financing if all these agencies can meet for a common agreement on finance. Federal aid should be invoked as successfully in this field as it has been for such activities as vocational rehabilitation, Smith-Hughes classes, and federal road programs. In most of these activities the states usually have to contribute a sum equal to that provided by the Federal Government.

State aid to local communities in the treatment and training of behavior problems is very inadequate in practically all states. In some instances, such as Illinois, aid is provided indirectly by the state through the Institute for Juvenile Research and through financial assistance for children in parental schools. Three states, New York, New Jersey and Pennsylvania, have rather general legislation with regard to state aid which in some cases appears to be interpreted to apply to behavior problem cases as well as to physically handicapped children. At the present time, a small number of states make provision for aid to local communities for the education of blind, deaf, or crippled children, and in expanding the program of these activities to all the states provision for similar aid for the education of behavior problem children should be included.

There is no standardization of method at the present time in the apportionment of state aid to local communities. In some instances a lump sum is allotted for each class, in others, an additional salary is provided for special teachers, in others, special aid is allotted at a specific rate for each pupil. The Committee's questionnaire to local school systems

disclosed a very great desire on their part for assistance from state and federal governments.

Local communities must eventually bear a large portion of the additional burden represented by this type of education since the extent of the problem will vary considerably according to local conditions. It is to be hoped that private, state and federal aid will stimulate local school systems and allied agencies to provide liberally for their share in this important program.

Informing the Public

The complete education of the child is the cooperative duty of the school, the home, and the social and recreational agencies of the community, and unless there is a well coordinated program the efforts of any activity may be nullified. In the interest of prevention, therefore, one of the most important phases of the entire problem of behavior and delinquency is keeping the public informed in the larger aspects of the problem.

There are a few factors or elements which operate against publicity but which should not be serious enough to threaten its success. Certain detailed methods of information might lead to exposure of personal individual problems with consequent embarrassment to parents. Obviously, individual case studies of behavior problems should be strictly confidential. Occasional instances of this sort have occurred here and there, which have seriously hampered cooperation, and sometimes resulted in curtailing the activity itself.

Another obstacle to cooperation on the part of the public is that too much publicity may lead to petty interference in the local administration of schools, clinics, or social agencies. In giving out information policies rather than administrative details should be discussed.

Widespread public information should have constructive results in enlisting more support both financial and otherwise. The results of such support are worth the effort and should be encouraged.

These considerations deal more or less with the political aspects of the problem. The real purpose of informing the public should be to promote a better understanding and more intelligent treatment of children. To carry out a constructive program of public information the causes of previous unsuccessful attempts along this line should be studied, in order to avoid errors, as well as to discover those factors which have brought significant results in other similar campaigns.

Cooperation with Agencies

The cooperation of all agencies concerned with treatment and training of behavior problem children is a matter of vital importance to the success of the program. The Committee's questionnaire indicated a very great number of school systems in which it was reported that local agencies of various kinds were assisting schools greatly in the solution of their problems.

The very nature of behavior abnormalities is such that many agencies are necessarily concerned, and unless they can work in really close cooperation the efforts of any one agency will be largely neutralized. Each local community must eventually take the initiative for itself and evolve a satisfactory plan of cooperation. This plan will avoid many of the present duplications of effort and remove much of the misunderstanding and suspicion which occasionally comes to light. There should be a continuity of essential records available to the various interested agencies.

The cooperation must be carried out between the schools, the juvenile courts, and state industrial schools for the more acute cases. Except in a few instances, the juvenile courts have little information about the school problem, nor do they transmit much information that is instructive to the state industrial schools. In turn, these agencies must work closely with local communities when pupils are returned there for a probationary trial.

There have been enough excellent examples of cooperation to show that it is possible in practically all situations.

The entire program for the prevention of delinquency will be greatly advanced and stimulated when friendly teamwork becomes more effective.

TRAINING OF CHILDREN

Methods of Instruction. It must be expected that the program of training for behavior problem children will be radically different from the traditional courses of study for normal children. While the conventional curriculum will continue to have an important place it will necessarily need to be radically modified, or even put completely aside at times in favor of dealing with the behavior tendencies of each child and their causes upon an individual basis.

The primary condition that must be considered is the maladjustment of the child; therefore the plan of correction, as laid down by the pediatrician, psychologist, psychiatrist, and social case worker, must be effectively carried out even though it may seem to contradict every traditional principle of conventional education. It is evident that every type of instruction from traditional academic teaching to the most flexible kind of vocational guidance should be available, but will be of little use compared with the technique of individual psychotherapy administered by properly qualified teachers in cooperation with the expert examining and advisory staff.

After the unusual features in the adjustment of behavior problem cases have brought about greater stability in children, radical revisions in traditional education are also necessary to complete the desirable readjustments. It is generally recognized that many of these children are not interested in traditional education, but have a somewhat greater preference for vocational and prevocational courses than for the academic courses. The schools must definitely accept responsibility for the fact that in not making education more attractive for these children they have sometimes actually contributed to misbehavior rather than to a positive program of prevention. Any intimation that schools are not to be

by teachers of special classes, in special schools, and in parental schools for pupils who are behavior problems.

TABLE 2
ACTUAL TRAINING OF TEACHERS OF CLASSES FOR
BEHAVIOR PROBLEM CHILDREN

Training in years above high school	Rural com- munities and cities under 30,000 population	Cities 30,000 to 99,999 in population	Cities 100,000 or over	Total
2 years.....	2	12	107	121
3 years	1	1	2	4
4 years	2	6	29	37
Master's Degree	1	18	6	25
				<hr/> 187

The data in Table 2 were obtained from the Committee's questionnaire returns. Of the 187 teachers 121 had the equivalent of a two-year normal course which is the usual requirement for regular elementary school teachers. Of the 187 teachers 37 had the equivalent of a four-year college course and almost as many, 25 had a master's degree. The preponderance of the teachers reported were from the larger cities, which may be expected, since it is there that the special work for behavior cases is to be found.

The reports showed that such courses as "abnormal psychology," "educational sociology," "social psychology," "mental hygiene," "hand and constructive work," "family and child welfare" were those taken by these teachers as special training. According to the school executives answering the questionnaire, such personal traits as "sympathetic understanding," "wholesome personality," "good health," and "enthusiasm" were found in the personalities of the special teachers.

In general, teachers of special behavior classes receive more than the salaries of regular teachers of the same grade of work. Table 3 presents the data collected with reference to the extra amount received. The median sum over the regular schedule is \$200 a year extra. Of the 18 cities reporting 13 are cities of 100,000 or over in population which

again clearly indicates that smaller cities and rural communities make very little provision by special class work for adjusting these problems. One notable exception to giving extra compensation is the Thomas A. Edison school of Cleveland where the teachers receive only the regular rates of pay. The Cleveland authorities believe that the better teachers are those who undertake work in special schools from preference rather than from a desire for extra remuneration.

TABLE 3

CITIES AND RURAL COMMUNITIES GIVING TEACHERS OF SPECIAL BEHAVIOR CASES EXTRA COMPENSATION

Amount extra per year	Rural and cities under 30,000	Cities 30,000 to 99,999	Cities 100,000 or over	Total
Less than \$100 extra.....	0	0	2	2
100	0	1	4	5
200	1	1	2	4
300	1	1	3	5
400	0	0	1	1
Over 400 extra.....	0	0	1	1

The first problem is to secure a better trained personnel for teachers of behavior cases. In order to do this, first of all more specialized instruction must be offered in teacher-training institutions. Additional work in psychology should be required. Such subjects as "aptitude testing," "adolescent psychology," "methods with adolescents," "teaching of dull and retarded children," "teaching of gifted children," should be added to the work required of prospective teachers of behavior classes. More work in mental hygiene is necessary and could be obtained by offering courses in "social psychiatry," "behavior problems of children," "social case work" and any others which will give teachers a thorough understanding of the mental hygiene viewpoint.

In addition to more required work of the type mentioned above, prospective teachers must themselves be emotionally stable and their own home situations should be normal and well balanced. Experience outside of the field of teaching is also of value in giving the teacher a wider viewpoint and

will assist her in helping problem children to adjust themselves to school procedures.

As so much of the teaching, training, and re-education of problem children involves individual work, teachers of these children should thoroughly understand how to use the techniques of individual learning by such plans as the Winnetka, the McDade or other forms. Some practical experience in social work or in public health work might be desirable. A thorough knowledge of public health work will always prove an asset. In order to secure the best teachers more than two years' training above high school work will be needed. College graduation, at least, should be required, and the work should be specialized along the lines suggested.

Not only should the requirements for teachers of special behavior classes be increased, but also the training of all teachers should include enough work in psychology, psychiatry and social service to enable them to recognize various emotional handicaps and be able to deal with ostensibly normal children in regular schools when they show signs of developing into behavior problem cases.

MENTAL HYGIENE PROGRAMS

Mental hygiene programs should be thoroughly studied and set up as an integral part of the education of all children. Measurement of their effectiveness should also be conducted concurrently.

The crucial problem centers around what types of material should be included and what should be rejected as unsuitable at various age levels. All departments of instruction claim that their particular programs provide for so-called character education. These claims should be enumerated and evaluated by scientific procedures. In addition to these indirect and implied methods the values of direct teaching, independent of any special subject matter, should be carefully considered. It would be timely to measure the effect of mental hygiene special weeks or programs which have been suggested and actually tried out in some school

systems. Such admonitions as "face life squarely," "don't harbor grouches," which are used in such programs, are excellent advice but they do not cure fundamental and deep-seated causes of unusual behavior.

While the Committee cannot place enthusiastic endorsement upon any of these plans at the present time, by inference the members are not fundamentally opposed to scientific experiment in these fields, and are truly hopeful that some constructive values will result.

APPRAISAL OF RESULTS

What should be done by a community to measure the effectiveness of its program both on pupils who are in school and on those who have left school and are attempting to adjust themselves to the community?

Any well-organized system of scientific study and treatment of behavior disorders in school children forming a part of the professional equipment of the school system will, of necessity, provide for the study of the preschool child and his environment by dealing with the behavior cases of school age and including the family picture and the community life. The team of scientific workers within the school system will also wish to operate a placement service for problem children effective while the child is still of school age as well as when he passes beyond the daily attention of the school. Such placement service will include a follow-up program which, through the medium of various reports and studies, will yield results indicating the effectiveness of the school program.

Justification for such a special project in the schools might well be found in a favorable lessening of the work of the juvenile court, state schools, and various local agencies caring for dependent and delinquent children, as well as reducing police court cases and improving the industrial situation in the community. All these results could best be determined and evaluated in reference to the provision made within the school system by the "team" of scientific workers

who are dealing with these problem children daily over so many years of their lives while they are of school age. This would mean only the addition to the "team" of the special technical workers necessary to extend and amplify the routine work of the "team" during the school life of the child.

GUIDANCE, PLACEMENT, AND FOLLOW-UP

The results of the Committee's study and questionnaire indicate that not much is done in the way of following up and placing pupils who have been in special classes for behavior problems. In Chicago this work is done through the Department of Vocational Guidance where one worker gives full time to the placement of all handicapped children. Furthermore, visiting teachers assigned to schools having special classes for behavior cases and also the visiting teachers assigned to the Montefiore School give part of their time to placing and following former pupils. Wherever pupils graduated from special classes or special schools continue their education in a high school, they are followed by means of the vocational advisor of the high school to whom they are assigned for special study and guidance in their high school work.

While very little is being done at the present time, it is no indication that there is no problem of placement and follow-up work. The very fact that the special pupils under discussion are nervous and unstable and either delinquent or pre-delinquent is an indication that more than ordinary provision should be made for following them after they leave the special class or special school. In those cities having vocational guidance departments, provision should be made for a placement officer assigned to care for these special cases. Because of the nature of these children, many will have to go into limited fields of work; therefore, study will be necessary to determine just what type of vocation behavior problem children are best fitted to enter. This will require intensive study, which must include a survey of the employment situation in the particular locality under dis-

cussion. Such placement should also be conducted in consultation with the diagnostic "teams" in the school system and with a technique consistent with their recommendations.

PREVENTIVE PROGRAMS AND MEASURES

No program can be expected which will completely prevent the development of these problems. Preventive measures which seem to have some effect in reducing the incidence of such conditions are fairly well known and accepted as elements in a community program of mental hygiene. Among such provision are the following: propagation of such organizations as Boy and Girl Scouts; adequate playground facilities; proper housing programs; well-balanced programs of parental education; efficient systems of school medical inspection and of public health work in general; good public libraries, museums, public recreational facilities and entertainment; community musical projects; competitive athletics; religious organizations that combine a degree of social activity with their endeavor; much needed modifications of the general education program with the supplying of real vocational guidance; welfare departments in connection with major industrial and commercial organizations in the community; better teacher-training programs which will include instruction in mental hygiene.

The encouragement of all conditions in the community which tend to increase the peace, satisfaction, and economic status of the people and to develop justice, honesty, and industry as elements in the community atmosphere will fit into a program of prevention in the mental hygiene field. Within the school organization a further departure from traditional and didactic method, and modifications of the curriculum in line with the new psychology, will result in profound changes in the philosophy of education which will exert a strong influence upon the character formation of the child. This influence will reach far into the field of parental education and the proper understanding and guidance of the emotional life of the infant and preschool child. This

is the only "character education" or "character building" which is worth talking about, that which is concerned with the foundations, the instinctive and emotional equipment of the child during the first six years of life. With that matter faced, there would still be great responsibilities to meet during the latency period and the period of adolescence when the school figures so largely in the child's life.

RESEARCH PROBLEMS IN BEHAVIOR

The entire field of behavior problems is an age-old one in and out of the school, but most of its treatment has been either by brute force or a blind faith that whatever treatment was administered, in the heat of anger or passion on the part of the parent or teacher, would providentially be the best method of solution. Educationally, except for a few cities the problem still remains much the same as before. There is a fertile field of research ahead in all phases of behavior. Practically every aspect of the Committee's report suggests fields of research which must be settled before procedures in the education and training of behavior problem cases can be ideally and scientifically executed.

The necessary research on all phases of behavior problems is a task too great for the resources even of large public school systems and must be undertaken by private or semi-private agencies or funds, or possibly subsidized by federal or state governments. School systems should gladly cooperate in furnishing facilities and cases for study and attempt to carry out the program which is eventually recommended. The number of research problems is legion. They may be grouped under three heads:

1. The nature of delinquency including such causes as physical, emotional, and nervous conditions
2. The psychological, psychiatric, and medical treatment necessary and their effectiveness
3. The educational program for behavior problems, including teacher training, educational and vocational guidance, the advantages and disad-

vantages of special segregation versus other methods of handling cases individually.

The problems of behavior and delinquency will never be settled until these problems are all analyzed, studied, and solved.

RECOMMENDATIONS

Within the short space of this report it has been impossible to do more than to sketch the general outlines for the treatment and training of behavior problem children. It is not intended as a complete guide to schools, agencies, or communities in handling their behavior problems but can only hope to show some of the major issues which must be raised and solved. The recommendations of the Committee are based on the realization that behavior problems not only affect the happiness and welfare of children but frequently persist into adulthood and cause crime, poverty, and chaos in society.

On account of the brevity of the report short and categorical statements should not be interpreted to represent a narrow or self-confident point of view of the members of the Committee who are fully aware that most of the problems which have been raised are intricate and not easy of solution.

Although the four members of the Committee represent different fields, educational administration, psychiatry, pediatrics and neurology, and clinical psychology, they are in very substantial agreement on the policies which have been outlined in this report. Furthermore, the Committee wishes to emphasize that this problem is so comprehensive that it can be solved only by the most complete and cordial cooperation of the agencies concerned with child welfare.

The following is a summary of the recommendations:

1. The program of training should endeavor to remedy and restore the present horde of behavior problem cases and by preventive measures in early childhood to lessen or, if possible, eliminate problems in the future. Human nature is so constituted that the entire elimination cannot be confidently expected, at least for a long time to come.

2. Reports from various sources show that the entire problem is scarcely being touched and, therefore, as quickly as possible programs of treatment and training should be put under way. Very splendid intensive demonstration has been successful in a few communities which may serve as worthy models.

3. Meager information is available as to the distribution of behavior problems by age, sex, race, or nationality. Research is needed in these matters although the general field of causes is probably more urgent.

4. Although an attempt has been made to classify behavior problems as nervous, emotionally unstable, or delinquent, each case offers a unique combination of factors, and needs individual rather than group diagnosis. After the characteristics of many individual cases have been made all possible group values should be derived from them.

5. The selection of cases should be made by examining clinics, by agencies cooperating with schools, by parents, by teachers and school administrators. The selection can seldom be delegated to any single agency since the individual problem may react differently in varying environments. Although many agencies should select cases, the diagnosing and reviewing should be arranged without unnecessary duplication.

6. Certain types of special educational segregation are necessary in unusually difficult cases. These facilities should be either special classes or schools, or parental homes, and they are justified only if they actually provide a better type of adjustment and re-education than can possibly be obtained in regular schools.

7. Such classes should carry no special names or titles to parents, pupils, or teachers which may suggest any stigma. For administrative reasons when names of classes are necessary they should be called *adjustment classes* or a similar title which carries the suggestion of therapy rather than punishment.

8. When special facilities are organized so as to oper-

ate effectively, their advantages far outweigh the possible disadvantages of stigmas and other theoretical obstacles.

9. The costs of the special treatment and training of behavior problem children is at least two or three times as much as for normal children, since all the special diagnostic and remedial programs should be charged against them. These additional costs are easily justified if the prevention of adult delinquency is actually facilitated.

10. In order to ease the burden on local communities state and federal aid should be made available. Methods of effectively financing such programs should be studied as an immediate need growing out of the White House Conference.

11. A program of informing the public should be initiated which will enlist enlightened public opinion and yet be conducted in such manner that no undue interference or objections will be raised to the program as outlined by the scientific diagnosticians.

12. There must be the closest and most effective co-operation between schools, parents and all agencies contributing to the welfare of children. This cooperation should also arrange to avoid unnecessary duplication of effort by various agencies.

13. The special courses of study and methods of instruction for behavior problems must be adapted to the needs of individual cases. This educational program must be interpreted widely to include not only the traditional education, but must consider that the formation of proper attitudes and ideals is also educational.

14. Special teachers must be selected for behavior problem children who have had unusual training in psychology, sociology, social case work, and the nature of delinquency. As an ideal situation it is also recommended that all teachers have much more training in the nature of behavior problems so that they may treat mild cases themselves as well as detect cases which need more careful individual diagnosis and treatment.

15. Not only should teachers be better trained and informed but the program of prevention should be extended into all channels of society where activities with children are concerned. Parental education and preschool education are important phases of this program which must reach many types and classes of parents that are ordinarily missed under present conditions.

16. The results of educational and emotional readjustments of children must be appraised with carefully standardized and scientifically determined methods. At present appraisal is too often a matter of hopeful opinion rather than actual demonstrated fact.

17. In order to complete the appraisal a system of guidance, placement, and follow-up must be established which will determine the success of programs in treatment and training. These programs must operate over a period long enough to prove the lasting validity of remedial programs.

18. Preventive programs must cover all phases of child training, formal education, vocational education, parental education, recreational activities, since in any of these fields behavior problems may take their origin.

19. All phases of the education and training of behavior problems must be studied upon a scientific basis if an effective program is to be carried out.

20. The solution of juvenile delinquency is one of the greatest challenges to the present generation.

GIFTED CHILDREN

GIFTED CHILDREN

IT has long been known that in all schools there were children who "never seemed to study, but always had their lessons." They were spoken of as having good memories. In former times, little attention was paid to this group. Some of them were more or less troublesome because they had the time, energy, and imagination to get into mischief; some were thought to be lazy because they idled away their spare time. A few of them were studious and were considered by their teachers and parents as "sure to make their mark in the world." Only recently has it been recognized that these children constitute a distinct group of superior intelligence who "deviate from the average to such an extent that they require special education to make the most of their possibilities." This group constitutes about 6 per cent of the school population; in other words, out of the 25,000,000 school children in the United States, approximately 1,500,000 require special treatment in order to make the most of their superior endowments. These children are fairly evenly distributed as to sex, and are found in all the different races and nationalities represented in our mixed population. They seem to be fairly evenly distributed between cities and towns and in rural districts.

DISCUSSION OF DESIGNATION

The term *gifted child* has been applied to the members of this group. Such a designation, however, is unfortunate for several reasons, the chief of which is that it is understood by most people to mean something quite different from that which is intended. These children are not necessarily endowed with special gifts such as a gift for music, a gift for art, a gift for poetry or other talents. Although children

so endowed are not excluded from our consideration, they constitute only a small part of the group. The *gifted child*, as here understood, is merely the child with exceptional intelligence.

The intelligence of a people is found to follow what is known as the normal curve of distribution. That is to say, there is a large middle group of average intelligence. At the lower end there is a small group of low intelligence, and at the other end a small group of high intelligence. The children discussed here are those at the upper end of the scale and constitute about 6 per cent of the total.

METHODS OF GROUPING

As already stated, these children require special education in order to make the most of their capacities. Our public school curriculum has been made for the great middle group, the average child; consequently it is not adapted either to the lower group or to the higher group, the gifted. The method of dealing with these gifted children which has aroused the most enthusiasm and attracted the greatest attention is that of grouping them together into special classes. While keeping them in a grade the usual time, new subjects are added and other occupations which will interest them and keep them occupied. This is the so-called *enrichment method*. Under these conditions, truly remarkable results are obtained. The children work with an enthusiasm and persistence that is delightful to see. There is no problem of discipline as they are too busy to get into mischief, and are easily led to adjust themselves to the needs and desires of the group. Not only is there no problem of discipline in the ordinary sense, but even children who already present behavior problems, become quickly adjusted in the less oppressive atmosphere of the gifted class. It is not generally appreciated that the gifted child is more sensitive than the child of average intelligence to unwise limitations to activities such as are often imposed by so-called "good disciplinarians." This type of child finds himself in the greater free-

dom of the special class with its more stimulating curriculum and, in the happiness of the new ordered freedom, becomes a highly satisfactory member of the group. Thus the children develop into good citizens and at the same time follow the line of their own abilities.

Although the special class for gifted children is enthusiastically upheld by those who have tried it, yet there remain people who raise what they believe to be more or less serious objections to such a plan. These objections must be briefly considered because they are a part of the present situation and, if valid, they will naturally influence the future methods of handling these children in the public schools.

One objection is that it is not democratic to pick out a few of the best children and give them special privileges.

In reply, it is urged that this is a misconception both of democracy and of the nature of these children and these classes. Democracy does not mean that all men are alike, or that all children should be treated the same. Whatever be the form of expression, the spirit of democracy is that everybody should have an equal opportunity. It is as important for the welfare of the group, as for the happiness of the individual, that the bright child should have the opportunity to exercise his intelligence and attain the highest achievement possible, as it is that the dull child should have an opportunity to learn the simple things that his limits of intelligence can encompass. Instead of being undemocratic, it is claimed that the special class is the only truly democratic procedure.

Another objection sometimes heard is that any segregation is undesirable; that as these children have to live in a world with all kinds of people, they should be educated in company with all kinds. In the same vein, apparently, it is urged that it is good for the different grades of children to be together because they learn from one another. The average child learns something from the gifted and the defective child learns from the average.

In reply, it is urged that this argument would logically do away with the graded school; that there is no more

reason for having children who can do fourth-, fifth-, and sixth-grade work in a third-grade class, than there would be in having those same regular grades all in one room. Also, two or three exceptionally bright children in a room are not "pace-makers" as some maintain, but are really "discouragers." The less able children quickly discover that it is no use for them to try to compete with the brighter children.

It would seem that undue stress is laid upon this point of the dangers of segregation. If it were a complete segregation, that is, all bright children being grouped together and kept away from the average and the dull during their entire childhood, the question might be worth considering. But to group children so that they can be better instructed is no more objectionable than to group them for any other purpose. These gifted children mingle with the other children in the building, on the playground, on the street, and about their neighborhood. Ten years' experience has shown no tendency toward an undemocratic attitude. The objection is theoretical; there are no facts to support it.

The third objection to the special class for gifted children is the fear that it will lead to conceit.

In answer to that it is claimed by those who have been interested in special classes that even long experience in such work has failed to show that this is the case. They even state that the contrary is true, urging that a child will more easily become conceited when he is the brightest in his room, than he will in a special class where he is with twenty-five others who are equally bright. Another point is, that if a conceited child is found in these classes, the fault was probably developed before he entered the class and the cause of the trouble would more likely be found in the home than anywhere else.

Here, as elsewhere, the fact is often overlooked that the school has all these matters under complete control. The gifted class is as amenable to the atmosphere the teacher creates as any other group. The good teacher can, and does, hold the class to a natural democratic attitude. Moreover, any tendency toward undue feeling of superiority is held in

check by the constant recognition of the idea of responsibility. It is useless to attempt to keep from gifted children the knowledge that they are brighter than many of their fellows, whether they are in a special class or in a regular room. This knowledge, however, is rendered harmless by combining with it the idea of responsibility. It is thus possible to develop in our schools a group of citizens having the ideal attitude toward the social group, with ability, and a sense of responsibility. The special class is doing this in those cities where enrichment is the ideal, and where teachers are chosen for their ability to develop rather than to discipline.

Interference with the normal development of leaders is the final objection. The argument is something as follows: In his regular grade the gifted child is a leader, being brighter than all the rest. We take him out of that situation and put him into a special class with twenty-five others, who are equally bright. In that class there can be only one leader. So where before we were developing twenty-five leaders, now we can have only one.

Such an argument appears to be due to a confusion in the use of the term *leader*. There are leaders of men and there are men who are leaders in their special lines. In the sense of being a leader of men, it is not true that the bright child in the regular grade is always a leader. In fact, he is rarely so. He usually leads in his studies but for that very reason he is sometimes unpopular and anything but a leader of his group. In the special class, each one leads in his own particular line. The experience of the cities that have had special classes for the longest duration seems to show conclusively that there is no interference with the development of leadership, but on the contrary, the process is greatly helped because each one has an opportunity to develop to the full his own talents. Moreover, one of the great values of this method is that the children learn to respect and be proud of the abilities of their fellows—each in his own line.

EXTENT OF EDUCATION

When we consider the actual situation in reference to special classes, we find the work confined almost entirely to the cities. In the small towns and rural districts practically nothing has been attempted. According to an investigation made by Professor Arch O. Heck of Ohio State University in 1927 and 1928, 40 cities located in 23 different states reported schools and classes for gifted children. The total enrolment in these classes was approximately 4,000 children. These would seem to show the outside limit of provision for gifted children in public schools in cities having over 10,000 population, with the exception of those cities where schools use an X, Y, Z classification, the X or bright children being in a class by themselves (where the X, Y, Z groups are all in one room and under one teacher, it does not constitute a special class for gifted children).

DIFFERENCES IN METHODS OF EDUCATION

These 40 cities comprise a total of about 150 classes which constitute almost as many different kinds of education experiment as there are cities involved. They may be divided into 2 groups on the basis of the objective in view—rapid advancement and enrichment.

Rapid Advancement Method

There are wide differences in the methods used to obtain the objectives. In several cities the work is confined to the high school, either junior or senior, and consists in some provision for the children accomplishing four school years in three, or three years in two. In one city, the bright children were picked out of the sixth grade and put into a group which planned to do three half-years in a year. When the middle of the seventh grade was reached they were redistributed, those who had succeeded and those who had come in were regrouped and finished the rest of the seventh and all of the eighth in a year. In another city, groups of bright children were picked out who did the first three years of

school in two, the next three years to be made in regular time after which they were again accelerated, doing the seventh, eighth, and ninth grades in two years.

Teachers Attitude. There is great difference in the amount of freedom given to the teacher to work out the plan. The rapid progress classes, of course, follow the regular program and for the most part such a classroom presents no obviously different appearance from any other regular schoolroom.

Committee members visited many of the cities having special classes for gifted children and report that the teachers of the rapid progress classes show little enthusiasm. Some are satisfied with the class and some are not. Some think the method is a mistake, because it gets the children into high school while they are still too young and they are misfits and often very unhappy. Others think this objection is overestimated and point to some children who have made good progress in their high school work. It must be admitted, however, that one hears far oftener of the child who entered high school or college "too young."

Enrichment Method

With the enrichment classes, we enter an entirely different atmosphere. They are practically all conducted on the activity plan. Fixed desks have been replaced by tables and chairs, and there is the utmost freedom for both children and teachers. The understanding is usually that the group will cover the year's work in the academic branches of the usual curriculum for any particular grade, and perhaps one new subject. Beyond that their time is their own, and in consultation with the teacher, they may spend it as seems best. The result is a wide range of activity, following as far as possible the desires of the individual children or of groups of children, and doing everything with an enthusiasm and a thoroughness that must be seen to be fully appreciated.

The rooms are usually provided with exceptionally good lists of books including encyclopedias, dictionaries, and other reference books. The children often work as much outside

of the room as they do inside. They spend considerable time visiting important industrial plants, such as banks, newspaper offices, factories of various kinds; government institutions, such as courts, post-offices, educational institutions, such as art museums and natural history museums.

Up to this time, it is found that this type of work is carried on in the following cities: Cleveland, with 14 classes in the elementary group, 6 classes in one junior high school (in the other high schools, both junior and senior, the children who come from these special classes have *not* been kept strictly together and by themselves); Los Angeles has 19 classes; Pasadena, 4 classes; Santa Monica, 3 classes; Fresno, 1. In all of these classes there is the greatest enthusiasm. The children, the teachers, supervisors, and superintendents are alike happy over the work. In one city the parents of these gifted children have organized a parents' association. In addition to these classes which have all been visited by the Committee, Amsterdam, New York, reports 3 classes conducted on the enrichment plan.

Selection of Children

The selection of children for these classes has been the subject of several experiments. In the beginning, it was apparently the custom to select children from some of the middle grades, such as the fourth grade or fifth. Generally, as the work has continued and advanced, they have been taken from lower and lower grades until now they are picked out almost as soon as they enter school, practically all classes having children from the 1 B grade, or at least from 1 A. They are selected on the basis of their intelligence quotients, location in reference to the school, temperamental conditions, health, and various other factors that should properly enter into the question.

As to the intelligence level, it has been practically agreed that 120 I. Q. may be safely taken as the lower limit though it should never be used absolutely. Some children a little lower are suitable; some above are not suitable for these

classes. In some systems they do not go below 130, not because the children could not profit, but because their situation makes it convenient to take only the very best instead of all of those who might profit by these methods. For more extended discussion of the size and organization of the classes, location, equipment, length of school day, and other details, we would refer to the literature already published on that subject.¹

TEACHER PERSONNEL

The teachers for these classes are usually selected from the regular teaching force, those chosen who are believed to be best adapted to this special work. They are familiar with the various activity methods, such as the Dalton Laboratory plan, the Project or Activities method, and other forms of progressive education.

COST

No definite figures are available, but the cost of special classes for gifted children is not necessarily greater than for the regular classes. Some extra expense, however, is a highly profitable investment. The classes, in order to have the highest success, should contain somewhat fewer pupils than are cared for in the regular grades. Secondly, the more equipment that can be provided, the greater the value of the class. This is especially true of supplementary reading and books of information.

NOMENCLATURE

There are almost as many different names for these classes as there are cities. The idea of rapid progress occurs in a number of them, such as "accelerated classes," "rapid advancement classes," "make time classes," and so forth. The idea of enrichment is advertised in the so-called "enrichment classes" and "development classes." In some the character of the course is frankly stated, such as "gifted children classes," "superior classes," and so forth. In others, this

¹ See Bibliography at end of report.

feature is hidden under some such term as "opportunity A class," "major work group," "adjustment classes," and the expression "special class." Although we have discovered no place where it has been used, the suggestion has been made that all special classes, the gifted, the blind, the deaf, the dull, and so on, should be left without any special designation, but be called by the name of the teacher. It would be understood by all who needed to know that Miss Blank's class was a class for gifted children, Miss X's class for backward children.

These enrichment classes have probably always been started as experiments, frequently with more or less misgivings, and with some persons closely connected with the project heartily disapproving and disbelieving in them. The result of ten years' experience in the two largest cities, Cleveland and Los Angeles, has been a pretty general acceptance of the plan and in several cases a complete conversion of those who were opposed. Principals who had no enthusiasm when a class was established in their building have come to be whole-hearted advocates of the project, so that at the present time there is almost no opposition from within the system.

SCIENTIFIC RESULTS

There has been, as yet, very little strictly scientific testing of the method. One of the most valuable studies is by Doctor Elizabeth Woods, Director of the Department of Psychology and Educational Research in the Los Angeles Schools. Dr. Woods compared two groups of gifted children. In one group there were 340 children from 13 special classes, the average intelligence quotient being 136. The other group consisted of 373 children whose average intelligence quotient was 137, but who had never been in special classes. Each child in each of these groups was rated by two individuals, the teacher and the principal. The children were rated on a scale of 5 in the following traits: leadership, self-assurance, desire for attention, seclusiveness, helpfulness, respect for self, respect for school authority, sympathy for

misfortune, and independence. A rating of 1 means having the trait in the *highest* degree; a rating of 5 having the *least* of the trait. The results are extremely interesting and significant, but too elaborate for reproduction here. One or two illustrations must be sufficient to make clear the method and the type of result obtained.

In leadership, for instance, the combined average of ratings by the principals and teachers was that 14.6 per cent of the *regular* children obtained a rating of 1 in leadership, while 18.9 per cent of the special-class children obtained a rating of 1. At the other end of the scale, 6.6 per cent of the regular children obtained the low rating of 5, while of the special-class children, this applied to only 1.8 per cent.

In the desire for attention, 14.6 per cent of the regulars obtained a high rating of 1 as compared with 11 per cent of the special-class children. On the other hand, a rating of 5, showing little desire for attention, was assigned to 7.7 per cent of the regulars and 8.8 of the special class. Dr. Woods concludes with this sentence, "One thing seems clear. Any fear that the segregation of these children into special groups will increase their desire for attention and seclusiveness, is unfounded so far as these reports are valid." In another city, a special class which had had some three years' experience in the elementary grades was combined, when it entered junior high school, with another group of gifted children who had never been segregated. In their work in junior high, the two groups were together. It was the universal opinion of the teachers that the groups that had been segregated for two or three years were superior in general educational performance to the other group.

A more objective and hence more conclusive argument than the preceding, is contained in a study by Cora Lee Danielson, Supervisor of the Gifted Classes (called Opportunity A Classes) in Los Angeles. She secured the marks of 248 children, who had been in Opportunity A rooms for gifted children for periods varying from one to three years, and also for a group of 381 pupils of equally high I. Q., who had never been in a special class. The marks were reduced

to grade points and a comparison of these showed an outstanding advantage in favor of the children who had had instruction in the Opportunity A rooms for practically every subject considered, English, English literature, social studies, mathematics, Spanish, French, and so forth. The children who had the advantage of more freedom in instruction seemed to have built up habits of industry, initiative, and responsibility which carried over with marked effect into their high school careers. Such is the situation so far as we have been able to determine it.

CONCLUSIONS

1. Rapid promotion has been more or less the policy of our schools for sixty years and has never solved the problem of the so-called *gifted child*;

2. Special classes for rapid progress have been more or less in vogue since 1900, and in thirty years have never solved the problem of the gifted child, nor made sufficient appeal to educators to produce any important development in them. On the contrary, several have been discontinued;

3. The so-called *enrichment classes*, after an experimental period of ten years in two large cities and for a shorter period, to a lesser extent, in two or three smaller cities, have aroused great enthusiasm in all of those persons connected with them.

RECOMMENDATIONS

The following recommendations are made:

1. Classes should be formed in all cities where a sufficient number of gifted children are so situated that they can with reasonable convenience be brought together. The work should be conducted according to the enrichment plan for at least an experimental period.

2. The Commissioner of Education of the United States should be requested to promote in such ways as he may find practicable, the consideration of the problem of gifted children throughout the United States.

3. Steps should be taken to acquaint every teacher, either in service or prospective, with the problem of the gifted child, with the importance of special education, and with the means and method whereby she may, even in a rural school, give some help and instruction to any bright child that she may find in her group.

4. The National Education Association should be asked to stress the importance of this matter to the teachers and administrators of our schools in order that provision may be made everywhere for helping the gifted child.

5. Much research should be undertaken to solve the many problems connected with the education of gifted children and the administration of special classes for them. The psychology of childhood, of learning, and of genius, are among the problems that should be attacked. Much money, both public and private, could be wisely turned to subsidize the trained investigator wherever he may be found.

6. Finally, it is agreed that in a democracy more than in any other form of government, high grade leadership is essential. The United States of America with its Congress; with its forty-eight commonwealths, each with its legislature; with its hundreds of municipalities, each with its own local government; must have intelligent leaders or fail in the struggle. Surely there was never greater need of able leadership than at the present time. And yet there are *one million and a half* children in our public schools with *exceptionally good brains* and *exceptionally high intelligence*, who need only the permission and the opportunity to develop the leadership for which they have the foundation; therefore, we urge that the White House Conference, and all intelligent, patriotic citizens of the United States take active and efficient steps to save this large number of children from the idleness, the more or less malicious mischief and the neglect which is their portion in the average public schools of today. Aside from the injustice to the child himself, it is almost a social crime to neglect these highly endowed children. As Horn well says: "Failure to develop the very bright to their highest capacity represents waste of the kind that we can least afford."

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TRAINING OF TEACHERS

TRAINING OF TEACHERS

IN considering the question of the training of teachers for the handicapped, three objectives were kept in mind:

1. To determine the needs in the public schools of the United States for teachers specifically and adequately trained to teach children who are physically or mentally handicapped.

2. To determine the extent to which the teacher-training institutions of the country are attempting to meet the demand for such teachers, the scope and adequacy of the courses offered, and the numbers of the various types of teachers being trained.

3. To study the quantity and quality of training desirable for teachers of special education, to formulate suggestive training curricula, and to suggest ways and means by which the schools of the country may be provided with an adequate supply of efficiently trained teachers for special classes.

Fortunately, several very careful studies pertaining to certain phases of the problem have recently been made, and as these have been most generously placed at the disposal of the Committee, it has been unnecessary to resort to extensive surveys covering essentially the same fields of inquiry.

EXTENT OF EDUCATION FOR THE HANDICAPPED CHILD

The first question deals with the extent of education for the handicapped child. According to statistics recently collected by Doctor Arch O. Heck¹ of Ohio State University

¹ Heck, Arch O. *Special Schools and Classes in Cities of 10,000 Population and More in the United States*, Washington, D. C., Govt. Print. Off., 1930.

regarding schools and classes for the several types of handicapped children in all cities in the United States with a population of 10,000 and more, the number of pupils and teachers is shown in Tables 1 and 2:

TABLE 1

NUMBERS OF TEACHERS AND HANDICAPPED PUPILS IN SPECIAL SCHOOLS AND CLASSES IN ALL CITIES IN THE UNITED STATES WITH A POPULATION OF 10,000 AND MORE

	Mentally defective ^a	Speech defective	Visually defective	Audit- orally defective	Ortho- pedic	Open air
Pupils ..	55,154	41,112	8,431	3,919	10,038	31,188
Teachers.	4,091	273	301	400	475	756

^a The term mentally defective as used here probably includes both feeble-minded and backward.

TABLE 2

STATISTICS OF SPECIAL CLASSES FOR HANDICAPPED CHILDREN BASED ON ESTIMATES OF THE SCHOOL POPULATION OF CONTINENTAL UNITED STATES FOR THE YEAR 1928, AND INFORMATION FURNISHED BY OTHER COMMITTEES ON SPECIAL CLASSES OF THE WHITE HOUSE CONFERENCE

	Pupils	Teachers
Mentally retarded ^a	225,000	12,500
Backward and border line ^b	450,000	21,428
Defective speech ^c	926,613	6,177
Blind ^d	11,400	1,140
Partially seeing ^e	80,000	3,333
Deaf ^f	24,000	2,400
Hard of hearing ^g	342,000	3,420
Crippled ^h	120,000	6,666
Open air ⁱ	675,000	27,000

^a One per cent of the school population and 18 pupils for each teacher.

^b Two per cent of the school population and 21 pupils for each teacher.

^c Three per cent of the school population and 150 pupils for each teacher.

^d The 10 per cent who are of school age, of the 114,000 blind persons in the United States, the estimate given by the National Society for the Prevention of Blindness, and 10 pupils for each teacher.

^e One to 500 of the school population and 18 pupils for each teacher.

^f One to 500 of the general population, 5 to 17 inclusive, and 10 pupils for each teacher. This estimate is based upon information provided by the United States Office of Education.

^g One and one-half per cent of the school population and 100 pupils for each teacher.

^h One to 1,000 of the general population and 18 pupils for each teacher.

ⁱ Three per cent of school population and 25 pupils for each teacher.

In some cases the number of pupils assigned for each teacher may appear large, but these numbers are based upon

the assumption that some schools will be centralized and some will have but single classes. In the cases of speech correction and lip reading teachers, it is assumed that these teachers go from school to school meeting several different groups during the week.

Dr. Heck's report, it should be remembered in making comparisons between these two sets of figures, applies only to cities of 10,000 or over, but as very few communities with a smaller population have organized special classes, the figures are fairly comparable. Even by allowing for considerable discrepancy, it is obvious that, both from the standpoint of the number of these children being provided for educationally and from that of the number of teachers available, the problem of the education of the handicapped child is not being adequately met.

TRAINING

In dealing with this subject, much use was made of a list prepared by W. W. Coxe and Eleanore Rose.¹ Reference was made also to a transcript of courses of study in special education, taken from the published catalogues of institutions throughout the country offering such courses, and compiled during the past year by Lewis N. Schleier, Teachers College, Columbia University, New York.

Dr. Coxe's list contains a total of 43 institutions in the United States offering some work which purports to contribute to the training of special-class teachers. Included in this list are:

Universities	21	State Residential	
Teachers Colleges	12	Institutions	4
Private Institutions	5	Liberal Arts College	1

Twenty-one institutions are designated as granting cer-

¹ *A Classified List of Institutions in the United States and Canada Offering Training for Teachers of Exceptional Children*, W. W. Coxe and Eleanore Rose. New York State Department of Education, published by the International Council for the Education of Exceptional Children, May, 1929.

tificates to teachers of one or more types of handicapped children. Of these there are:

Universities	7	Private Institutions	4
Teachers Colleges	6	State Institutions	4

The amount of work required by the 21 institutions granting teachers' certificates varies all the way from six weeks to four years of college work, distributed as shown in Table 3.

TABLE 3

AMOUNT OF WORK REQUIRED BY 21 INSTITUTIONS
GRANTING TEACHERS' CERTIFICATES

Length of course	Number of institutions
6 weeks	2
18 weeks	1
1 year	8
2 years	3
3 years	4
4 years	3

The requirements for admission to these teacher-training courses vary from high school graduation to four years of college.

TABLE 4

Entrance requirements	Number of institutions
High School graduation	12
1 year of college	1
1.5 years of college	1
2 years of college	6
4 years of college	1

Examination of the published curricula of those schools requiring more than one year of work for a certificate reveals the fact that the greater part of their courses are such as would be required of any teacher in training, and that not more than one year of actual specialized training is included. Since this appears chiefly in the third or fourth year, it would seem that, as a rule, two years of college are regarded as a necessary prerequisite.

In a further effort to obtain reliable information on what was actually being done in the training of special-class teachers, questionnaires were sent to all those institutions granting

certificates to such teachers. A copy of the questionnaire will be found in the Appendix, page 580.

The purpose of the questionnaire was to determine as specifically as possible how many teachers were being trained, what was the extent of their training, and what types of children their training would fit them to teach. Returns were received from 100 per cent of the schools to which questionnaires were sent.

As indicated in Table 3, the length of courses offered varies from six weeks to four years. Figures of the last five years, showing the average number of students attending courses, the varying lengths of the courses, and the type of children they were preparing to teach are shown in Table 5.

TABLE 5

AVERAGE NUMBER OF STUDENTS ATTENDING COURSES, VARYING LENGTHS OF COURSES, TYPE OF CHILDREN TO BE TAUGHT

Length of course	Mentally retarded	Hard of hearing	Blind, partially seeing	Orthopedic	Defective in speech
6 weeks	125	9	34	8	12
18 weeks	10	—	—	—	—
1 year	13	43	10	8	4
2 years	5	5	—	—	—
3 years	20	—	—	—	—
4 years	16	24	—	—	—
Totals	189	81	44	16	16

It will be seen from Table 5 that by far the largest number of students pursuing courses in special education are preparing to teach mentally deficient children. Of this number 62.5 per cent have had six weeks, or less, of training, 37.5 per cent, eighteen weeks or more. All institutions offering a course of one year or more actually provide approximately only one year of specialized training. Most of these are colleges and universities.

The majority of teachers of the deaf or hard of hearing are receiving one year of special training, and by far the larger proportion of these are being trained in private schools or in state residential schools for the deaf and hard of hearing. Some of these schools require as much as two

years of college work as a prerequisite for admission, but a number of others require only high school graduation.

Most of the training of teachers for classes of children who are blind or defective in sight has been done by or under the auspices of the National Society for the Prevention of Blindness. This work has been conducted in various colleges and universities throughout the country for several years, and consists of a brief but intensive six weeks' course during summer sessions.

Very little has been done as yet in the training of teachers for classes for crippled children. Of those institutions reporting, as seen in Table 5, only two mention work in this field; one, a university offering six weeks', and the other, a teachers' college giving one year of training. The same applies to the training of teachers of the defective in speech.

It should be borne in mind that this report does not cover all possible sources of training for teachers of special education, but only those institutions listed in Dr. Coxe's survey as granting teachers' certificates in these special fields.

Consideration of the foregoing facts leads to the conclusion that the teacher-training institutions of the country have arrived at no uniformity of opinion as to the extent and character of training that should be required of special-class teachers, the requirements for such training courses, or even the necessity of offering any special training for such teachers. A comparison of Tables 1 and 2 immediately shows the need for a greatly increased supply of adequately trained teachers for handicapped children. Other facts presented indicated how varied are the views as to the scope and quality of the work that should be required, the requirements for admission to training courses, the types of institutions which should conduct training courses, and the number of teachers necessary. It would seem that the time has come for some agreement to be reached regarding these matters.

SUGGESTED SCHEDULES OF COURSES

There are two aspects of the problem of providing trained teachers for handicapped children:

COURSES RECOMMENDED FOR ALL TEACHERS, SUPERVISORS, AND PRINCIPALS IN ELEMENTARY SCHOOLS

It is recommended that certain basic courses dealing with mentally and physically handicapped children be included in the curriculum for all teachers, supervisors, and principals preparing for service in the elementary schools, for the following reasons:

There are large numbers of physically and mentally handicapped children in all school systems.

Classroom teachers and administrators usually have to assume the obligation of referring these children to medical and psychological examiners.

This obligation they cannot discharge efficiently without a sympathetic and accurate understanding of the problems involved.

Practically all such handicapped children are first taught by regular classroom teachers for longer or shorter periods. (It is probable that throughout the nation at large, most handicapped children spend all their school days in the regular grades.)

Most special classes are located in the regular grade buildings under the administration of the elementary school principal.

The number of such basic courses that should be pursued by those preparing for work in the regular grades must necessarily vary with the length of the training course. The bases of courses shown in Table 6 are suggested as reasonable standards which teacher-training institutions should approximate.

TABLE 6

Name of course	Two-year courses <i>Credits</i>	Three-year courses <i>Credits</i>	Four-year courses <i>Credits</i>
The study and education of hand- icapped children.....	2-4	2-4	2-4
Diversified industrial arts.....	2	2	2
Remedial instruction.....	—	2	2
Mental and educational hygiene.	—	2-4	2-4
Clinical and abnormal psychology	—	—	2-4
<i>Total</i>	4-6	8-12	10-16

One lecture period a week, with two hours for preparation, during one semester is the equivalent of one credit. Three hours in industrial arts, laboratory, observation or participation in practice courses not requiring additional study or preparation, are the equivalent of one credit. Outside additional preparation may reduce the three hour period to a two hour period.

Based on the maximum recommendations, the amount of time devoted to the above courses would be one-fifth of a year in two-year curricula, slightly over one-third in three-year curricula, and about half a year in four-year curricula.

Courses (1), (4), and (5) should be broad, cultural courses and apply on any bachelor degree, and also on graduate degrees when given as graduate courses by instructors who have a doctorate.

1. *Study and Education of Handicapped Children.* This is a general orientation course dealing with: the description, causation, diagnosis, and classification of mental and physical handicaps in school children; adaptation of instruction to individual needs; methods of organization and objectives of special classes for the physically and mentally handicapped; the special-class curricula and teacher; the social, eugenic, and economic bearings of the problem of mental deficiency. Visits to institutions and schools for the handicapped.

2. *Diversified Industrial Arts.* Teachers should pursue a number of courses in diversified industrial arts and pre-vocational work for handicapped children, in order that

they may be able to teach a sufficient variety of handwork for younger and older children, varying from low-grade mental deficient to merely backward children. Sufficient work should be offered to yield from three to seven semester credits. Selection should be made from the following activities, those italicized being recommended for the introductory course in diversified industrial arts:

Paper (including batik paper work) and *plastic work* (clay, soap, wax, gesso, cement), *raffia*, *reed*, *hand-loom and foot-loom weaving* (*plain* and pattern work), knitting, crocheting, embroidering, *darning*, hand and machine sewing, *garment-making*, macrame, hammock-making, lamp shade construction, *toy-making*, carpentry, furniture-making and repairing, *chair-caning*, upholstering, brush-making, leather work and cobbling, simple forms of tin and sheet metal work, free-hand drawing, and sketching, stencil design, *block printing*, poster-making, home service, household mechanics, correlation projects, puppet theaters, and more advanced forms of shop work.

3. *Remedial Instruction*. Study of the symptoms, causes, diagnostic techniques, and remedial treatment of difficulties in reading, spelling, number work, writing, sensori-motor activities, and so forth. It would be well, if in connection with this course and the general course in observation, participation, and practice teaching, some time could be given by all the (practice) students to observation and practice teaching in different kinds of special classes.

4. *Mental and Educational Hygiene*. The problems, scope, objectives, and techniques of mental and educational hygiene as applied to school children. Selection may be made from the following topics: the preservation of mental health and prevention of personality maladjustments; physical, psychic, social, and educational factors of mental health and maladjustment; the mental hygiene of learning; hygienic objectives of each branch of study; adjustment of school work to individual interests and abilities; establishment of wholesome, fundamental, physical, emotional, social, and intellectual habits and attitudes; prevention and correction of minor

maladjustments (timidities, quarreling, fighting, irritability, emotional instability, jealousy, envy, selfishness, disobedience, deception, teasing, whining, sulkiness, day-dreaming, shyness, over-sensitiveness, egotism, obstinacy, sex conflicts).

5. *Clinical and Abnormal Psychology*. This course includes procedures and results of the individual methods of psychologically examining the mentally, educationally, and morally deviating children; aims, methods, and general directions for making psycho-clinical examinations; study of general level of intelligence, specific intellectual abilities and disabilities in all kinds of intellectual functions (sensitvity, perception, attention, images, memory, association processes, etc.); study of general level of motor competency and specific motor abilities and disabilities; stages of emotional development, and emotional, instinctive, temperamental, and character peculiarities. Visits to institutions.

COURSES RECOMMENDED FOR SPECIAL- CLASS TEACHERS

General Considerations

The recommendations herein made are based on the following considerations:

1. It is advisable that teachers before preparing for special-class teaching should first have completed the regular course for teachers of normal children, preferably in the elementary grades, and also should have taught normal children for at least two years.

2. All special-class teachers should pursue certain common, basic courses in special education. The special-class teacher should have a general acquaintance with and a sympathetic interest in the whole field of special education, owing to the frequent interlacing of physical and mental defects, and the close social, economic, and sometimes educational relations which exist between different types of defective children. Breadth and perspective are needed in special-class work no less than specialization.

3. All special-class teachers should, in addition, secure technical training for the particular type of work which they wish to pursue. While the basic or fundamental special-education training may be the same for all kinds of special-class teachers, the specific technical training will differ for teachers of blind, deaf, mentally deficient and other types of handicapped children.

4. The amount of special-class training that the teacher should secure will differ according to the type of class she is to teach, the extent to which the teaching problem differs from the teaching of normal children, the availability of specific technical courses in different fields of special education, the size of the salary differential, and so forth. In colleges and universities the teacher finds that the best selection of special-class courses is for the training of the mentally handicapped. It is possible to offer considerably more courses for visiting teachers, teachers of speech correction, teachers of the deaf and teachers of the mentally handicapped than for sight-conservation teachers or teachers of the malnourished or crippled because the problem of educating the handicapped of the first category differs more from the normal teaching procedures than does the problem of training the second group. Possibly when the teaching procedures for the latter groups have been more refined, this will not be true.

5. In the fields in which a high degree of specialization is possible, because of the extensiveness of the curricula that can now be supplied (as in visiting teacher work, and teaching the mentally handicapped, delinquent, speech defective, blind, and deaf) the standard requirement before teachers have received their final certificate should be one year of specialized training (30 semester hours of credit).

Plan of Special Education Training. The following represents the best plan for taking the special-education work. After the teacher has finished the regular two-year teacher-training course, and preferably after she has had at least two years of experience in teaching normal children, she should devote a regular academic year to the special courses. When this plan is impracticable, she should complete the

courses during successive summer sessions, or the work could be taken during a regular semester and two or more summer sessions.

This standard of required work is justifiable in all school systems which offer a salary differential of \$100.00 or more to special-class teachers. When the differential is less than this or when the salary scale is low, a reasonable requirement might be the completion of two intensive summer courses (12 semester credits), or even a single intensive summer course (6 semester credits). Of course, it is not implied that handicapped children in rural districts, towns, small cities, or in low salary school districts do not deserve to have as highly skilled teachers as the children in the large urban centers, but the same standards can hardly be enforced in the smaller places, unless the state, through ample subsidy, makes it possible for the teachers in such places to secure reasonable financial rewards for their investment of time and study.

When the teacher-training course is lengthened to three or four years, as has already been done in some places, the final year might be devoted to special-class preparation by those who intend to become special-class teachers. It is desirable, however, that such students should secure a minimum of teaching contact with normal children (just how much that minimum represents is yet to be determined) before they become special-class teachers.

DETAILED SCHEDULE OF COURSES

The courses here given are arranged approximately in the order in which they should be pursued in summer sessions or in extension courses. They should be taken in addition to the introductory courses listed on pages 560 to 564. The approximate amount of material which should be covered in each course is shown by the number of semester credits.

I. FOR TEACHERS OF MENTALLY RETARDED, BACKWARD AND BEHAVIOR PROBLEM CHILDREN

Observation, participation and practice teaching in classes for the mentally deficient and backward.

Semester credits4-6

No demonstration and practice school for teachers training in this branch can offer satisfactory facilities without at least two classes, one for the mentally deficient and one for the borderline and backward. A thoroughly satisfactory practice school will supply classes for the following four types: (1) The lower grades of the mentally deficient; (2) the higher grades of the mentally deficient; (3) the borderline grades; (4) the backward and restoration grades. The number of classes needed will depend upon the number of observation and practice teachers enrolled and the state requirement as to the permissible number of students for each teacher. No credit should be given for observation work unless it involves note-taking and discussion, and a minimum amount of participation and practice teaching. The emphasis should be placed upon actual practice teaching. Students who have not earned credits previously in practice teaching with normal children in schools of recognized standing should be required to earn two additional credits, preferably with normal children, before they receive their final certificate. The practice teaching should cover all phases of the special-class program: opening exercises, physical training and games, sense training, academic instruction, manual training, moral training, habit formation, speech improvement, and music.

Special methods of teaching mentally handicapped children.

Semester credits2

This is an extension of the course in remedial instruction (see page 560) dealing with the special methods employed

in the teaching of all phases of the special-class curriculum for children of varying degrees of mental ability, such as sensori-motor, manual, literary, health, physical, moral, and social training. This course should be closely correlated with the course in observation, participation, and practice teaching. In fact, it could be given as an extension and elaboration of that course by means of reading assignments and critical reviews of such assignments.

Speech improvement and correction.

Semester credits 2

This is a practical clinical course in the improvement of speech and the correction of lisping, indistinct articulation, and nasality. (Successful treatment of stuttering and stammering requires more extended training.) To offer successfully such a course, a continuous supply of at least twenty speech defectives of various kinds should be available for class use.

Individual examination of mentally handicapped children.

Semester credits 2

This should be a practical clinical course in the psychological (chiefly by means of Binet and psychometer tests) and physical examination of different kinds of handicapped children; the investigation of social, educational, developmental, and family case histories; reports and summaries of conclusions. The course is not offered for the purpose of training special-class teachers to become psychological examiners, but rather to develop in them the clinical attitude and point of view in the classroom study and teaching of handicapped children.

Mental hygiene.

Semester credits 2

If the course suggested on page 561 dealt chiefly with the mental and educational hygiene of normal children, this course might deal mainly with the mental hygiene of prob-

lem children or of special types of mentally and socially maladjusted children.

Corrective physical training.

Semester credits1

This course should provide training in the correction of flat-foot, round shoulders, postural defects, minor spinal curvatures, and minor neuromuscular disabilities.

Additional Courses

In addition to the above major courses, a course in higher forms of shop or vocational training may be pursued with profit, and also courses in the principles and practice of vocational guidance (particularly with reference to handicapped children), supervision of special classes (particularly for supervisors), educational sociology, and group attainment and intelligence tests.

It will be necessary in the remaining schedules merely to list the courses by title.

II. FOR TEACHERS OF DEAF CHILDREN

In addition to the courses on pages 560 and 561

Principles of formation and development of speech and rhythm for the deaf and training of residual hearing.

Semester credits4

Observation, participation, and practice teaching of deaf children.

Semester credits4-6

Methods of teaching language and reading to the deaf.

Semester credits2

Study of principles of teaching hard of hearing children, together with study of the anatomy and hygiene of the ear.

Semester credits4

Industrial arts for handicapped children.

Semester credits2

Speech improvement and correction.

Semester credits2

Mental hygiene:

Aspects not covered in the minimum requirement of the course listed on page 561, and specifically the mental hygiene of the deaf.

Semester credits2

Doctor J. E. Wallace Wallin makes the following comments in proposed courses for teachers of deaf children:

The solution of the instructional problem with visually and auditorially handicapped children is twofold: (1) it requires the efficient application of the specific teaching techniques devised to meet the sensory handicaps of these children (speech reading, lip instruction, use of large print, etc.); (2) it requires the efficient employment of the teaching techniques that have been devised to meet the needs of children of various capacity levels, those who have specific abilities and disabilities, those who are subject to subtle emotional, temperamental, and intellectual idiosyncrasies, and those who require concrete presentations. My investigations show: first, that the mental deviations referred to under (2) above are even more prevalent among sensorially handicapped children than among those not so handicapped; second, that the training offered in practice schools limited to the techniques for compensating or mitigating handicaps in the receptor organs does not provide skill in the instructional procedures required by the mental deviates who have sensory defects; third, that a brief course in Observation, Participation, and Practice Teaching in Classes for the Mentally Handicapped does to a con-

siderable extent provide this necessary skill; and fourth, that the interests of sensorially handicapped children with mental deviations (except the obviously low-grade mentally deficient) will be better served if they are assigned to classes for children with sensory defects, provided the teachers possess a broad fundamental training in special education, than if they are assigned to classes for the backward.

I, therefore, recommend that teachers of the visually and auditorially handicapped should pursue a brief course in Observation, Participation, and Practice Teaching of the Mentally Backward and Deficient.

Supplementary Courses

Corrective physical training.

Semester credits 1

Vocational guidance.

Semester credits 2

Educational sociology.

Semester credits 2

Anatomy of the eye, eye defects, hygiene of vision, and tests of vision.

Semester credits 2

Teachers of Conservation of Hearing

Children with very defective hearing may be assigned to conservation of hearing classes for the development of residual hearing and speech, and for speech and lip reading. In the Baltimore class established in January, 1930, the development of speech and hearing is furthered by the use of a room amplifier with head sets for each child, while the pupils enjoy the privilege of reciting with the normal-hearing children in the regular grades. The teacher of the class assists in the preparation of the regular grade assignments.

Training courses for conservation of hearing include:

Principles of teaching hard of hearing children, together with the anatomy and hygiene of the ear.

Semester credits 4

SPECIAL EDUCATION

Principles of formation and development of speech and rhythm for the deaf and training of residual hearing.

Semester credits4

Observation, participation, and practice teaching of deaf children.

Semester credits2

Observation, participation, and practice teaching of hard of hearing children.

Semester credits2-4

Methods of teaching language and reading to the deaf.

Semester credits2

Speech improvement and correction.

Semester credits2

Supplementary Courses

Corrective physical training.

Semester credits1

Vocational guidance.

Semester credits2

Educational sociology.

Semester credits2

Aspects of mental hygiene not covered in the introductory course, particularly the mental hygiene of the deafened.

Semester credits2

Anatomy of the eye, eye defects, hygiene of vision, and tests of vision.

Semester credits2

For Teachers of Lip and Speech Reading

Principles of teaching hard of hearing children, together with anatomy and hygiene of the ear.

Semester credits4

Observation, participation and practice teaching of hard of hearing children.

Semester credits2-4

Speech correction and improvement.

Semester credits2

Principles of formation and development of speech and rhythm for the deaf and training of residual hearing.

Semester credits4

Supplementary Courses

Vocational guidance.

Semester credits2

Aspects of mental hygiene not covered in the introductory course, particularly the mental hygiene of the deafened.

Semester credits2

Anatomy of the eye, eye defects, hygiene of vision, and tests of vision.

Semester credits2

III. FOR TEACHERS OF SPEECH IMPROVEMENT AND CORRECTION

In addition to the courses listed on pages 560 to 562.

Speech correction and improvement practicum (chiefly indistinct articulation).

Semester credits2

SPECIAL EDUCATION

Speech correction and improvement
practicum (chiefly stammering and
stuttering).

Semester credits 2

Teaching speech reading and speech
to deaf and deafened children.

Semester credits 2

Anatomy and physiology of the nose,
throat, and vocal organs.

Semester credits 1

Mental hygiene:

Aspects not treated in the intro-
ductory course, including the mental
hygiene of speech.

Semester credits 2

Speech correction and improvement
(advanced course).

Semester credits 2

Psychology of speech.

Semester credits 2

Voice science.

Semester credits 2

Individual examination of mentally
handicapped children (psycho-clinic
practicum).

Semester credits 2

Oral expression.

Semester credits 1

Phonetics as applied to speech correc-
tion.

Semester credits 2

Neurology and physiology.

Semester credits 2

IV. FOR TEACHERS OF THE PARTIALLY SEEING

(Conservation of Vision Teachers)

In addition to general courses listed on pages 560 to 562.

Special methods of teaching visual defectives in conservation of vision classes, including observation, participation, and practice teaching.

Semester credits3-6

Special methods of teaching the blind.

Semester credits2

Anatomy of the eye, eye defects, hygiene of vision, and tests of vision.

Semester credits2

Mental hygiene:

Aspects not already considered, particularly the mental hygiene of the visually handicapped.

Semester credits2

Supplementary Courses

Vocational guidance.

Semester credits2

Educational sociology.

Semester credits2

V. FOR TEACHERS OF CRIPPLED CHILDREN

In addition to courses listed on pages 560 to 562.

For all special teachers of the crippled.

General course on muscle disabilities and muscle training (orthopedics, corrective physical training, games adapted to different types of crippled children, physiotherapy, visits to clinics and hospitals).

Semester credits2

Crippled children (types, causes, mental characteristics, care, education, vocational guidance, placement, visits to orthopedic classes).

Semester credits4

Speech correction and improvement (a practicum particularly devoted to defects of articulation and speech defects prevalent among cripples).

Semester credits2

Observation, participation, and practice teaching of mentally handicapped and crippled children.

Semester credits2-4

Individual examination (see page 565).

Semester credits1-2

Mental hygiene:

Aspects not treated in the introductory course, including the mental hygiene of crippled children.

Semester credits2

For Teachers of Industrial Arts

(Occupational Therapists)

Additional courses in various types of handwork adapted to crippled children.

Semester credits4-6

For Physiotherapy Teachers or Physiotherapists

Specialists in the field of physiotherapy may, of course, receive their fundamental physiotherapy training in accredited medical or physical education departments.

In addition to graduation from an accredited school of physical education:

Bone, joint, and muscle anatomy physiology and pathology.

Semester credits2-4

A practical course in corrective physical training (round shoulders, spinal curvature, faulty posture, flat foot and foot strain).

Semester credits2

Theory and practice of physiotherapy (kinesitherapy, muscle training, massage, therapeutic exercises, hydrotherapy, electrotherapy, thermotherapy, heliotherapy, ultra-violet therapy, bandaging).

Semester credits6-12

Principles of occupational therapy for crippled children.

Semester credits2

Crippled children (types, causes, mental characteristics, care, education, vocational guidance, placement).

Semester credits4

The study and education of handicapped children.

Semester credits4

Clinical and abnormal psychology.

Semester credits4

VI. FOR TEACHERS OF OPEN AIR CLASSES

In addition to the courses listed on pages 12-15.

Malnourished (pre-tubercular, and anemic children, types, causes, phys-

ical and educational treatment, visits to clinics).

Semester credits 2

The education of malnourished and pre-tubercular children (types of classes and buildings, equipment, educational regime, specialized gymnastics, plays, games, visits to schools and classes).

Semester credits 1-2

Principles of nutrition and health education for the prevention and cure of malnutrition.

Semester credits 1

Observation, participation, and practice teaching of mentally handicapped and malnourished children.

Semester credits 2

VII. FOR VISITING (ADJUSTMENT) TEACHERS

Principles and practice of visiting teacher work (adjustment problems between teachers, pupils and parents, and the home and school).

Semester credits 4-8

Clinical and abnormal psychology.

Semester credits 4

Mental hygiene.

Semester credits 2-6

Behavior disorders.

Semester credits 2

Educational sociology.

Semester credits 2

Social and psychiatric case work.

Semester credits2

Education of mentally and physically handicapped children.

Semester credits4

Individual examination of mentally handicapped children.

Semester credits2

Observation, participation and practice teaching in classes for the mentally deficient and backward.

Semester credits1-2

Group attainment and intelligence tests.

Semester credits2-4

Vocational guidance.

Semester credits1-2

For Teachers of Speech Correction

(See courses for teachers of speech improvement and correction.)

Supplementary Courses the Special Classroom Teacher Could Pursue with Profit

Vocational guidance.

Semester credits2

Educational sociology.

Semester credits2

Group attainment and intelligence tests.

Semester credits2-4

RECOMMENDATIONS

Where Teachers Should Be Trained

1. In order that high standards of work may be established and that teachers may receive due credit for the courses taken, all training courses for teachers of special education should be conducted or sponsored by recognized normal schools, colleges, or universities. Whenever any other institution offers training courses they should be under the direction of authorized teacher-training institutions, which have authority to establish curricula, to maintain standards, and issue credits.

2. All institutions offering training courses for special-class teachers should be equipped with practice classes affording opportunity for observation and practice teaching with the type or types of children for whom teachers are being trained. State residential institutions can well be utilized as an auxiliary means for study and observation of large groups of special types of children.

3. There should be one well organized and equipped department for the training of special-class teachers in each of the more populous states. A regional training center might well meet the needs of several of the less densely populated ones. These should be departments in regular teacher-training institutions. A larger number of training centers would in all probability result in a duplication of effort, unnecessary expense, and lowered efficiency.

Requirements for Admission to Training Courses for Special-Class Teachers

4. Since high school graduation is required for admission to any recognized college or university in the country at the present time, it goes without saying that the candidate for training as a special-class teacher should be a graduate of an accredited high school.

5. Since this is a field of teaching requiring not only the general training demanded of all teachers, but in addition special and technical training pertaining to the particu-

lar type of children the student is preparing to teach, it is desirable that the general training of the special-class teacher be equal to that of the regular grade teacher. This training should precede her special training. Further, since the minimum training essential for teaching in the grades in the majority of the states is two years more than high school, it follows that at least two years of teacher-training work should be a necessary prerequisite to training as a teacher of special education.

6. At least two years of successful teaching experience with normal children.

APPENDIX

QUESTIONNAIRE ON THE TRAINING OF SPECIAL- CLASS TEACHERS

Name of Institution Reporting: _____

I. For which of the following types of exceptional children do you prepare teachers? Please indicate by check mark.

Type	Number
Mentally superior	_____
Mentally deficient	_____
Auditorially defective	_____
Speech defective	_____
Visually defective	_____
Orthopedic	_____

II. How many full-time students have you had in the Department of Special Education preparing to become special-class teachers in each regular semester during the last five years?

1925-1926	{ First Semester	_____
	{ Second Semester	_____
1926-1927	{ First Semester	_____
	{ Second Semester	_____
1927-1928	{ First Semester	_____
	{ Second Semester	_____
1928-1929	{ First Semester	_____
	{ Second Semester	_____
1929-1930	{ First Semester	_____
	{ Second Semester	_____

III. How many full-time students have you had in the Department of Special Education preparing to become special class teachers in each summer session for the past five years?

1925	_____
1926	_____
1927	_____
1928	_____
1929	_____

**ORGANIZATION, ADMINISTRATION AND
SUPERVISION**

ORGANIZATION, ADMINISTRATION AND SUPERVISION

THE primary purpose of this report is to outline as concisely as possible the major problems in the organization, administration and supervision of special classes for mentally retarded, physically handicapped and gifted children. Space will not permit a detailed statement of the many suggestions and recommendations made. Special problems involved in providing adequate educational services for these groups of children and the preparation and certification of teachers for special-class work have been discussed in detail.

The public schools are primarily responsible for providing adequate opportunities for the handicapped children in need of special educational services. No other public agency is equipped to furnish them with a good general education, occupational guidance, vocational training and proper placement. The future welfare of hundreds of thousands of these children depends, to a large degree, upon the ability of the public schools to help them physically, educationally and vocationally.

THE PROBLEM

The studies of the various committees on Special Classes indicate the magnitude of the problem. There are tens of thousands of children who have vision defects so serious as to require special-class training to conserve their vision and insure their general education. There are tens of thousands more with defective hearing who need to be placed in special classes. A still larger group with speech defects are in need of remedial treatment and training. Over 100,000 crippled children are in need of better educational services, including

home teaching, transportation and special class facilities. The deaf, the blind and those with lowered vitality, including children who are tubercular and those with serious organic heart diseases, add hundreds of thousands to this vast army of children who are physically handicapped.

The emotionally unstable, the mentally handicapped, and the gifted are other large groups in need of special educational services. To see that these children are provided with a good general education and, for a large percentage, with vocational training which will ensure their economic independence, is a challenge not only to the public schools but also to every public and private agency in the United States. Adequate facilities for these children will be granted in proportion to the public demand for such facilities. State legislation, state aid and state leadership will all help, but the primary problem is to bring about a realization on the part of every community in the country of its responsibility for the proper education of these children who are in need of special-class services.

RECOMMENDATIONS

Services of Federal Government

1. That Congress enact legislation providing for a limited amount of federal aid to be apportioned to the states for the purpose of stimulating the development of adequate educational facilities to meet the needs of handicapped children. Such aid shall be made available to the states for the salaries of teachers, supervision, research and teacher training. A limited appropriation by the Federal Government for this work would undoubtedly result in every state undertaking the organization of special-class services at a much earlier date than would be the case if the work was dependent entirely upon state and local support. The White House Conference committees have indicated very clearly both the magnitude and the seriousness of the problem. The welfare of so many young people is at stake that the Federal Government should give its whole-hearted support in promoting the services necessary to meet their needs.

2. That Congress appropriate to the Office of Education a total sum which it may use for research, surveys, special studies, advisory services to the states and local communities, and general promotional work for handicapped children. Such an appropriation should be made available for the employment of both temporary and permanent personnel to assist in formulating educational programs to meet the needs of the various groups of handicapped children. Furthermore, a more extensive program of research is necessary if the work for these children is to be developed on a sound educational basis. The Office of Education should have a staff of highly qualified experts to assist the states and local communities in the organization of the work.

3. That the Office of Education appoint a national advisory council for handicapped children composed of representatives of national organizations interested in the welfare and education of the handicapped to advise in the formulation of and assist in sponsoring a comprehensive educational program for all the handicapped children of this country. At the present time there is little cooperation between the many organizations interested in this problem, with the result that the educational needs of certain groups of handicapped children are greatly emphasized while those of other groups are almost entirely neglected. A national advisory council could perform a great constructive service by bringing about a better understanding of the educational needs of all handicapped children and securing an endorsement of the program on the part of the national and affiliated state organizations. No organization would have to forego its present work. There is so much to be done for these children that each national and state organization could undertake more responsibilities, in addition to giving its support to the larger program planned to help all handicapped children.

4. That the Bureau of the Census secure for each ten-year period, at the time of the federal census, the name, address, age and nature of disability of each physically handicapped minor from birth to twenty-one years of age. The classification would include the blind, the deaf, the crippled and other handicapped groups readily defined. It is also

recommended that the Bureau of the Census furnish each state department of education with the names and addresses of all physically handicapped children within its borders. A federal census of physically handicapped children would be a valuable aid in supplementing the census taken by the states and local communities. It would also be extremely valuable as a uniform index of the number of handicapped children in the country and in each state and would indicate, at each ten-year period, the progress being made in reducing the numbers.

5. That the Public Health Service, in cooperation with educational agencies, prepare material for the use of school nurses, teachers and pupils in prevention work in the schools. A considerable proportion of the physical handicaps among children is due to ignorance of recognized preventive measures. The public schools, if provided with adequate information in regard to the prevention of physical handicaps, can perform a great constructive service in reducing the number. The Public Health Service, in cooperation with the educational societies, could also assist in preparing material for use in the public schools that will assist in the proper physical classification and grouping of children to safeguard their physical welfare.

6. That the Federal Board for Vocational Education make special studies to determine the occupational opportunities open to various groups of physically and mentally retarded children and suggest the kind of training programs best adapted to prepare them for economic citizenship. Organized vocational training in special vocational schools maintained by the states and local communities can be given to a great many of these young people. A large percentage, however, will undoubtedly receive their training by means of special training programs provided at the place of employment. The training must be so carefully planned as to take into consideration not only the physical or mental handicap of the individual but also his particular aptitudes and abilities which may be capitalized in the training program. If properly trained and placed a majority of these young people are fully as competent and dependable as persons of normal physical and mental ability.

7. That the Department of Labor make studies to determine to what extent labor and compensation laws prevent physically handicapped persons from securing employment. A further study is needed to determine what special provisions of labor and compensation laws should be enacted to safeguard adequately the interests of both employer and the physically handicapped employee. The Department of Labor can also do much to assist in breaking down the prejudice against the employment of persons with physical handicaps.

Services of the States

8. That the states amend the education laws so as to provide supporting legislation and financial aid for a state-wide program of special education for handicapped children. The public educational structure of this country is founded on constitutional provisions and supporting legislation of the various states. The development of adequate educational services for handicapped children is dependent upon adequate legislative and financial support. It is recommended:

That the state education laws be amended so as to authorize local school authorities to provide transportation, tuition, artificial appliances, board and room and such other special services as may be necessary for the proper education of the various groups of handicapped children. In many states local school authorities, willing to provide special services for the handicapped, are unable to do so because the state educational laws do not authorize the expenditure of public monies for such purposes.

That the state education laws be amended so as to provide for an annual census of all physically handicapped minors from birth to twenty-one years of age, including the blind, deaf, hard of hearing, crippled, tubercular, cardiac and those with vision defects. It is particularly important that the names and addresses, as well as the nature of the disabilities, of children of preschool age be secured in order that the corrective work may be undertaken and, if possible, completed before the children enter school. A thorough census would also reveal the number of children in need of corrective physical work,

the number who are not in school because transportation has not been provided, the number who cannot attend school unless special-class facilities are made available and also the number who are home-bound and in need of home teaching. Accurate information is essential if adequate services are to be provided.

That legislation be enacted by the states requiring local school authorities to establish and maintain special classes whenever there are ten or more children who are so handicapped as to require special-class services to insure their proper education.

That legislation be enacted by the states to equalize the cost of such services for physically handicapped children, including the salaries of supervisors and teachers, transportation, artificial appliances, board, tuition, placement and follow-up service. Financial aid by the state is essential in equalizing the cost of providing the necessary special services for these children.

That the states make available an appropriation for the necessary administrative and supervisory service in the state departments of education. Such an appropriation should be sufficient to employ competent supervisors and directors and provide for necessary clerical service, printing and traveling expenses. It is urgently recommended that every state make an appropriation sufficient to provide at least one well-qualified supervisor to organize and administer a state-wide program for handicapped children and to assist local school authorities in developing proper educational services for these groups.

That the state legislature, wherever necessary, appropriate funds for the training of teachers for special-class work and the professional improvement of teachers in service.

That the state appropriate funds when necessary for the establishment and maintenance of special state institutions for the care and education of handicapped children.

That the state laws be amended authorizing the state department of education to determine the qualifications and certification of all teachers of handicapped children employed by state institutions and the public schools.

That the state laws be amended requiring state departments of education to approve the courses of study and supervise the education of handicapped children in all state institutions and the public schools.

That appropriate state laws be amended so as to authorize the judges of the children's courts, or other appropriate courts, to issue orders for the physical care and education of handicapped children, the cost of such service to be made a charge against the county or other appropriate unit and that state aid be provided to equalize the cost of such service.

That the state education laws be amended, whenever necessary, so as to provide for the establishment of special education districts and the appointment of special education commissions, or boards, which shall make provision for the education of physically handicapped children living in villages and rural communities. At present this is one of the most difficult problems as the numbers living in any one rural district are rarely large enough to justify the establishment of special classes such as exist in the cities. Special education commissions for counties or special administrative units must be provided in many states if adequate provision is to be made for the education of the thousands of handicapped children who live in villages and rural communities. Such commissions should be authorized to provide for the establishment of special classes, home teaching, transportation, and such other services as may be necessary in furnishing educational opportunities for these children.

The state rehabilitation laws should be amended authorizing the state rehabilitation service to provide occupational advice, vocational training and placement for all classes of physically handicapped children.

In order to insure a carefully coordinated state service for handicapped children, appropriate state laws should be amended providing for the appointment of a state advisory council composed of representatives of interested state departments. The council should include the state department of education, state department of health, state department of social welfare, state department of labor and any other interested state department.

Services of State Departments of Education

The following services should be provided by the state department of education:

9. Advisory and promotional service should be maintained to insure a continued development of the work for handicapped children. Such a service should include the making of surveys, consulting with local school authorities in regard to special classes, arranging for transportation, preparation of courses of study adapted to meet the needs of handicapped groups, cooperation with other public and private agencies in the development of a coordinated program of services and advising with local communities in regard to special equipment necessary for special classes.

10. The appointment of an advisory council for handicapped children made up of representatives from interested public and private organizations, to assist in planning the state program for handicapped children. An advisory council would be an invaluable aid to the state department of education in securing general public support, legislation and financial aid for the program. Many of the organizations interested in the welfare of handicapped children could provide certain special services impossible to maintain at public expense.

11. Organization and supervision of a program, whenever necessary, for the training and professional improvement of teachers of special classes. The training of teachers is a state responsibility. The quality of the educational services provided for handicapped children will be determined to a large extent by the thoroughness of the teacher-training program. In some states, the numbers of special-class teachers may not be large enough to warrant establishing a teacher-training program. These states should secure trained teachers from recognized teacher-training institutions outside of the state, or arrange to send local teachers to such institutions for their professional preparation for special-class work.

12. Establishment of minimum standards for the certification of teachers and supervisors of special classes. Mini-

imum standards prescribed by the state are essential to insure the employment of well trained teachers for special classes.

13. The establishment of minimum standards governing the organization of special classes, such standards to include size of classes, special equipment and facilities, supplies, length of school day and school year, courses of study and personal service.

14. Organization and supervision of the educational work for handicapped children in state-supported institutions. In many states the educational work in state institutions for handicapped children is not under the supervision of the state department of education. This work should meet the same minimum standards relative to qualifications of teachers, courses of study, equipment, supplies and other services as is prescribed for the public schools, and the educational classes should be regularly supervised by representatives of the state department of education.

15. Supervision of the annual census of physically handicapped children. The state department of education, in cooperation with the local school authorities, should determine the information to be secured in regard to all physically handicapped children from birth to twenty-one years of age. Copies of the names and addresses, together with information in regard to the nature of the disability and needed educational services, should be sent to the state department of education. An accurate census is essential in planning a thorough educational program for physically handicapped children. The state department of education should carefully tabulate census returns and recommend the establishment of such special services as may be necessary to care adequately for the educational needs of all physically handicapped children.

16. Maintenance of clinics to aid local communities in examining physically handicapped children. It is impossible for the rural schools, or many of the village and small city schools, to provide a qualified staff to examine them. In many cases special equipment is needed for the examination. Reliable clinical service is necessary to classify properly and

group the handicapped children in need of special educational service. State departments of education should have a staff properly equipped to render this important service to the rural and village schools.

17. Supervision of all special classes by qualified persons so as to insure proper educational standards and the meeting of the minimum standards prescribed by the state. This supervision should also include the approval of all special classes for receiving special state aid.

Services of Local Communities

18. The development of adequate educational opportunities for the handicapped children depends to a very large degree upon the willingness and ability of the local schools to furnish them. Laws providing for the establishment of special classes for handicapped children, generous state aid, trained leadership in the offices of the state departments of education are all invaluable aids in the development of the work. Of equal importance is the realization on the part of every local community of its responsibility for the education of the handicapped children. The numbers of handicapped children in the urban communities are usually large enough to warrant the establishment of special classes and the maintenance of other special services including transportation, home teaching, vocational guidance and training, special clinical examinations, artificial appliances, and placement and follow-up service. A majority of the urban communities have sufficient wealth to provide these services. In these communities the major problems of organization include: (a) a census and special surveys to determine the numbers and needs of the handicapped groups; (b) the establishment of special classes; (c) the providing of transportation in order to bring the groups together for special work; (d) vocational guidance and training to insure preparation for earning a living; (e) placement and follow-up service to assist these young people to become established in occupational life; (f) adequate supervisory service; and (g) the appointment of advisory committees representing interested groups to aid in the development of the program.

19. The problem in the rural districts and villages, because of the limited number of children to be served in any one district, is to provide the services enumerated above for the urban districts. In states with county school organizations it would be possible for the county board of education to furnish special services for handicapped children, on a county-wide basis. Children could be brought together at convenient centers for special-class work and other special services. The county board of education could provide transportation, clinical service, home teaching, guidance and placement. In the states without county education boards it will be necessary, if this problem is to be met, to create special education districts and appoint special education commissions responsible for the education of the handicapped groups. We must recognize that these children in rural districts will never receive an adequate education until proper facilities are provided for their training. Unless such facilities are provided these children must go through life with a double handicap.

20. The Committee reports which appear in this volume of the White House Conference discuss in detail the special problems involved in the organization, administration and supervision of an educational program for the various groups of handicapped children. The extent to which this problem will be solved depends upon: (1) a recognition of the educational needs of the various groups of handicapped children; (2) the employment of competent leadership by national, state and local organizations; (3) adequate legislation to encourage and promote the work; (4) financial support to provide needed services; (5) the coordinated and united support of the many agencies interested in the welfare of handicapped children, and (6) a realization of community responsibility for the education of its handicapped children.

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